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ABSTRACT

The purpose of this study is to estimate the financial resources required by the educational system during the 1970s. Part 1 analyzes the past development of education costs and budgets and explains crucial aspects of the economy. Part 2 concentrates on the future. It makes alternative enrollment projections through to 1980 and examines five alternatives that reflect philosophies currently held by various educational leaders in Thailand. Then total government expenditures, assuming no change in financing policies, were calculated for each of the alternative enrollment projections. From these calculations it was seen that if no new financial resources are made available for education, the government will have to devote between 4.0 and 4.4 percent of its gross domestic product to education in 1980 as compared to only 3.2 percent in 1970. In the final part of the study, various new financing or cost-saving proposals are worked out. Some of these can be quantified, while others will require considerable research before they can be implemented. (Author/IRT)

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Financing educational systems: country case studies

3

International Institute for Educational Planning

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Problems of financing the Thai educational system in the 1960s and 1970s

Nicholas Bennett

U S DEPARTMENT OF HEALTH, EDUCATION & WELFARE
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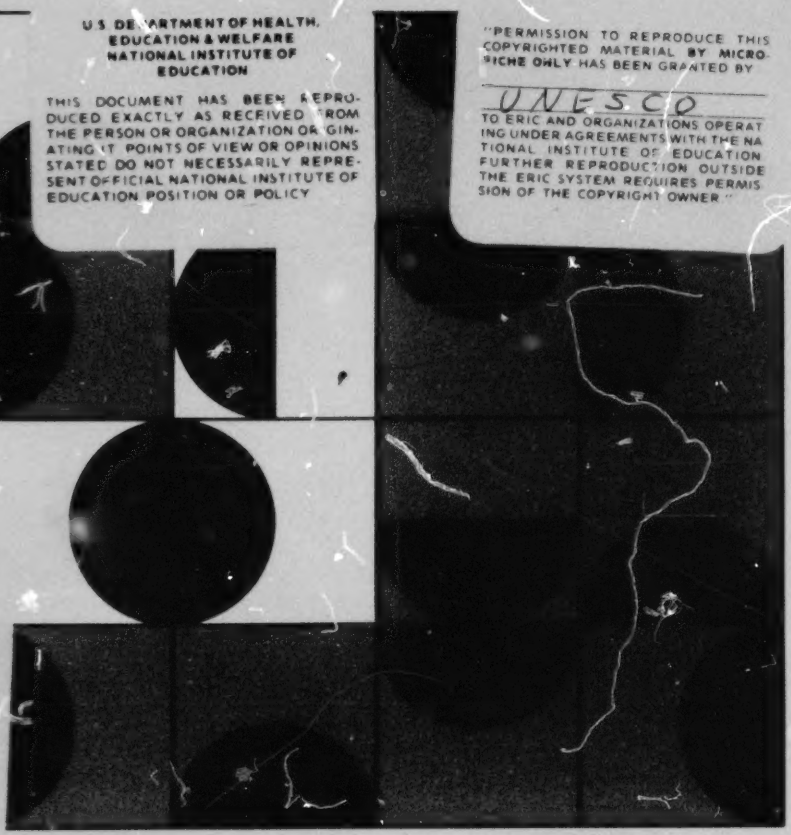

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International Institute for Educational Planning

Problems of financing the Thai educational system during the 1960s and 1970s

Nicholas Bennett

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Aims and methodology of the IIEP research project on financing educational systems

This research project, launched by the International Institute for Educational Planning early in 1970, originated in an enquiry as to the real possibility of the developing countries financing their educational objectives in the course of the United Nations Second Development Decade, bearing in mind the high level of expenditure that has already been reached in most cases, the constant rise in unit costs, and the increasing competition within the state budgets themselves that education will probably encounter in the future from the financing of productive investments, debt servicing, and other predictable expenditures.

Viewed in this light, therefore, the research is not strictly limited to the study of financing techniques, but has wider aims:

1. To explore the real weight of probable financial constraints on the development of educational systems up to 1980.
2. To study the various financing methods likely to augment resources, and to define a strategy of educational financing more closely adapted to social and economic realities.
3. To analyse certain alternative solutions (new structures, new technologies, etc.) capable, by reducing costs or improving the efficiency of the teaching process, of leading to a better balance between educational targets and the resources available for them.

In addition to these extremely concrete objectives, concerned with the real problems facing educational planners in all countries, the collation of the essential data should provide the basis for the answers to more theoretical questions, affecting, for example, the type of correlation between educational expenditure and the level of development, between the level of expenditure and the method of financing, between the level of unit costs and the development of the educational system, etc.

With these aims in mind, two types of study are being undertaken:

1. *National case studies* for the *retrospective* (1961-70) and *prospective* (1980 or beyond) analysis of the expenditure, financing and costs of educational systems in the widest and most representative possible sample of countries—at least fifteen; these studies should, as already stated, reveal both the magnitude and the nature of the financial constraints to be expected in the general framework

of the development of the economy and of the finances of the state, and the level and various alternative forms for the possible development of educational systems. These studies will thus cover the whole field of educational financing, costs, and policies in each country concerned.

2. *Specific case studies* covering, first, the different possible methods of financing (centralised, decentralised, public, private, etc.) and, especially, original ways of raising supplementary resources, and, secondly, the study of new educational solutions calculated to reduce costs.

These studies are being carried out in Member States by the IIEP in close collaboration with national specialists, either from government departments or from universities; in many cases the research is a concerted effort by the IIEP and the country concerned, for the common benefit of both parties and of the international community as a whole.

This project will culminate in a synthesis report summing up the findings relating to all the problems posed. The studies themselves are being published as single monographs in the collection *Financing educational systems*, comprising two series, one of country case studies and one of specific case studies.

The financial outlay for the implementation of this ambitious project could not be provided from Unesco's basic grant to the Institute. The IIEP is deeply grateful to the Member States and various organisations who, by their voluntary contributions, have enabled it to launch and pursue this research: in particular to SIDA (Swedish International Development Authority), NORAD (Norwegian Agency for International Development), DANIDA (Danish International Development Agency), CIDA (Canadian International Development Agency), the Republic of Ireland, and the Ford Foundation. The Institute is also deeply indebted to the Member States and national specialists in various parts of the world who have agreed to co-operate with the IIEP in carrying out these studies. The publication by the IIEP of certain studies by outside consultants does not necessarily imply, however, the Institute's agreement with all the opinions expressed in them.

Preface

This first case study by Nicholas Bennett on financing and educational policy in Thailand deals with a country in which, despite the modest level of economic development ($90 *per capita* in 1960, $160 in 1969) and a labour force structure still characteristic of under-development (75.6 per cent of workers in the agricultural sector in 1971), the education system is relatively developed.

Since the beginning of the 1960s four-year primary school attendance is virtually universal in Thailand. The apparent rate of school attendance in the first cycle of primary schooling (grades 1 to 4) reached 95 per cent in 1965; it reached 28.5 per cent in 1969 in grades 5 to 7 (upper first level) and 16.8 per cent in grades 8 to 10, then fell to 4.6 per cent in grades 11 to 13, which mark the end of secondary schooling (higher second level).

An indication of the growth of enrolments between 1965 and 1970 can be gained from the following figures: 13.5 per cent per annum for attendance in grades 5 to 7; 10.9 per cent per annum for the lower level of secondary schooling, 10 to 20 per cent for the various streams in the higher level, and 7 per cent to 85 per cent per annum in non-formal training programmes (part-time, literacy, vocational training, etc.). Thailand is therefore one of the countries which will achieve, in an already foreseeable future, the abolition of illiteracy by a sustained educational effort.

The author also brings out the fact that it has been possible to achieve this development of schooling by diversifying the sources of financement of educational costs. The government's share in expenditure on education in 1969 appears to have been 78.6 per cent; other sources include various school fees, 18.5 per cent; local and municipal contributions, 2.4 per cent; donations, 0.5 per cent. Bennett notes that there have been no serious financing problems despite the considerable expansion of school enrolments. The share of public educational expenditure in GNP is fairly low in comparison with other developing countries (2.6 per cent in 1963; 3.1 per cent in 1969). However, problems are beginning to occur as the profile of the school pyramid alters, giving a larger place to the most expensive kinds of education (second and third levels), and increasing difficulties in financing manifest themselves.

The origin of these difficulties is to be found in Thailand's economic situation,

which has been deteriorating since 1970. Decreasing U.S. military expenditure, a slowing-down in the rate of economic growth, and the development of unemployment in urban areas are some aspects of the crisis. But in Bennett's analysis, three major problems emerge. The first is that of the balance of trade; despite the spectacular increase in the volume of exports, there has been a deterioration in the terms of trade as a result of the drop in the world prices of four of the country's major exports: rice down 21.7 per cent in 1971, maize 13.5 per cent, rubber 22.6 per cent and tin 1.2 per cent. The second is that despite the rise in agricultural prices, inequalities in living standards as between urban and rural populations continue to persist, since middlemen absorb the bulk of agricultural prices. The third problem is that while the family planning policy has had some success in the cities, it has hardly affected rural populations, which continue to grow at a sustained rate.

In consequence, the third economic plan, 1971-76, provides for a whole series of measures designed to rectify the economic situation while accepting a rate of economic growth of 7 per cent (lower than the rate for the first two plans). Among these measures an increase in investments designed to bring about equality between rural and urban zones and to increase the number of new jobs obviously has high priority, but it comes up against the unfavourable state of the balance of payments; the production of goods for export (agricultural and industrial) should therefore be encouraged and a national industry should be developed to cut down imports of finished products. Consumption should also be reduced and priority should be given principally to investments in the public sector; the plan assumes an annual rate of growth of 6.1 per cent in public consumption, as opposed to 8.5 per cent for investments (in particular in the social sector). In this perspective, state expenditure on education should be in the neighbourhood of 10 billion baht in 1980 as compared with 4.2 billion in 1970 and 7.2 billion in 1976. In other words, educational expenditure should increase during the present decade (3.8 per cent of GNP in 1980) at a rate comparable with that of the 1960s.

In the light of these financial prospects, what educational policy can be followed in Thailand? In principle, this policy is laid down in the third educational plan drawn up in 1970-71, currently being implemented; first-level education is to be extended to keep pace with population growth and to attain the objective of universal seven-year schooling in 1980; second- and third-level education is to be developed, especially in the fields of medicine, technical education and teacher training; efficiency and output are to be increased at all levels of education; the standard of teacher qualifications is to be improved; and rural training and the non-formal education sector are to be developed, in accordance with the principle of lifelong education.

It was not necessary, therefore, for Nicholas Bennett himself to formulate the elements of a possible policy up until 1976; he has however elaborated for the four-year period 1976-80 five possible variations in the evolution of the school system: (1) the basic scheme extrapolating the third plan until 1980; (2) a variation with six years' first-level education; (3) a variation with an "80

per cent first-level/second-level transition rate"; (4) a scheme combining variations (2) and (3); and (5) a more restricted variation, with six years of first-level education and a 65 per cent transition rate into second level. The author investigates the costs and financing needs of each variation and notes that new means of financing will have to be found if the objectives of Thailand's long-term educational policy are to be attained. Bennett analyses a certain number of solutions to the financing problem: increased school fees, improved use of buildings and equipment; parent participation in school building; income from social and community activities organised by the school; increased financing from local authorities, etc. Using all these methods, it would thus be possible for education's share of GNP in 1980 to be in the region of 5 per cent.

Not all the lessons which can be drawn from this study are presented in the author's conclusion. In particular, those concerning the relations between the level of enrolments, the level of expenditure and the level of unit costs can be formulated only in the comparative synthesis report which the IIEP will produce when all the country case studies are completed.

Meanwhile, Nicholas Bennett's work throws considerable light on the mechanism of the interrelations between economic and social factors, financial possibilities and educational policy in Thailand. In this respect, it forms an important contribution not only to the understanding of the problems of educational financing, but also to the methodology of educational planning.

The IIEP is grateful to the Thai authorities and national specialists for the extremely active help they were kind enough to extend to the author throughout the preparation of this work.

RAYMOND POIGNANT

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EXPLANATORY NOTE

Throughout this study the author received active assistance from Mr. Namsap Chantanahom, Mr. Sakol Intah and Mr. Sanya Chattanond, without whose help it could not have been completed. Although the author has received irreplaceable advice and assistance from officials in all parts of the Ministry of Education (especially from Mr. Somchai Wudhiprecha, Mr. Pramuan Senarith and the entire staff in the Educational Planning Division) and from officials in other Thai government agencies, as well as help in the original design of this study from Mr. Jacques Hallak of the IIEP in Paris, neither any Thai government agency nor the IIEP is responsible for the study's inevitable errors and omissions. The conclusions and observations in this study are entirely the responsibility of the author and do not necessarily reflect the views of any other organization.

Summary of major lessons and conclusions

This study was designed specifically to identify the financing problems that might be faced in implementing any one of five possible strategies for expanding the Thai educational system between now and 1980, and to propose solutions to these problems. However, a large number of lessons and conclusions of general interest for, it is hoped, both Thai officials and our counterparts in other countries are highlighted in this study. We will, at the outset, draw attention to what we consider to be some of the most important lessons and conclusions of this study. The following list is not intended to be comprehensive, but merely to cover the most important points.

1. General

(a) In planning education it is necessary to consider not only the formal in-school and out-of-school systems, but all educative influences on society (T.V., radio, religious organizations, clubs, etc.).

(b) In planning education the greatest possible co-ordination is needed between educational planning and economic planning organizations so that each supplies the other with the necessary information, in the right form and at the right time.

(c) Reliable, up-to-date and extensive statistics are absolutely essential for any effective planning.

(d) The stucture of an educational system must be considered as a tool for achieving particular objectives and should be flexible so that it can be altered when proved necessary.

(e) If a barrier is removed between two levels in the progression of pupils up the educational ladder, it must inevitably be replaced somewhere else in the system.

(f) High repetition and drop-out rates impose a considerable burden on the financing of education and on the effectiveness of the teaching-learning process. The possibility of introducing automatic promotion should be investigated.

(g) Because of the high individual benefits to be gained from further education there is often pressure for upgrading institutions. Before such upgrading is accepted,

the long-term manpower and financial implications should be carefully studied.

(h) If population growth rates are to be significantly reduced in the long run, it is necessary to change people's attitude to family planning through the introduction of population education programmes in and out of school.

(i) Non-formal and out-of-school education is often an inexpensive and effective way of achieving given educational objectives.

2. Costing

(a) In costing an educational system the greatest attention should be paid to, and the most sophisticated methodologies used for, the largest items of expenditure; errors in the costing of such items will lead to the greatest over-all inaccuracies.

(b) In a heterogeneous system, or in a part of an educational system with only a few institutions, macro-methods of costing are not likely to be particularly accurate.

(c) For any particular educational goal there are likely to be alternative methods of reaching the desired end with different costs.

(d) In a short- or medium-term cost projection there is no effective way of dealing with increases in teachers' salary scales. Such increases, however, are necessary if teacher productivity is to be improved.

(e) The salary scale and the teacher qualification structure affect the average salaries of teachers in a given system, but the average experience of the teaching force is also of considerable importance.

(f) Given certain enrolments, it is often possible to rephase desired capital expenditures. The same is not true for recurrent expenditures.

(g) No projection is ever completely accurate; it is thus necessary to calculate the possible order of magnitude of errors, and to consider their effects.

(h) In order to calculate the total educational burden borne by a society, the private costs being met by parents for books, uniforms, transport, etc., should also be included. Often, however, such data are very hard to obtain.

3. Standards, norms and utilization

(a) As teacher costs make up by far the greatest proportion of total costs in any educational system, it is essential to ensure that teachers are being effectively used as teachers and that they are not devoting too much of their time to clerical and administrative tasks.

(b) To carry out any reasonable capital costing exercise, it is first absolutely essential to discover the current level of utilization of physical facilities; only then is it possible to discover what extra facilities are needed to cater for an increase in enrolments. This is also a necessary precondition for the preparation of any standard plans for construction.

(c) If capital costs are to be kept to a minimum, it is necessary to draw up standard plans in order that the greatest possible usable space can be obtained at the lowest possible cost. In addition such standard plans should help ensure a high level of space utilization in all new construction.

(d) In order to obtain a homogeneous educational system, with the greatest possible equality of educational opportunity, and also to ensure that *all* schools have sufficient resources to provide a good quality education, it is absolutely essential that costing standards and norms should be developed and enforced for all levels and types of education. The use of such norms is also likely to produce considerable savings.

(e) In order to ensure that private schools play an important role in providing good quality education, the system of subsidies should be designed in such a way that those schools making the greatest effort should also receive the greatest assistance. Subsidies should not, however, be given to private schools on an indefinite basis, but rather for a fixed period of time and, in general, they might be more effective if given in kind (teachers, books, equipment, etc.) rather than cash.

(f) An equalization formula should be developed for the allocation of government subsidies to municipalities and local authorities. This formula should take account of present enrolments, enrolment ratios (compared with some desirable figures) and also the effort the local government is making in raising revenues for education. In this way it could be ensured not only that the subsidies are directed where they are needed, but that the burden of central government financing of local education will in the long run be reduced.

4. Revenue and saving

(a) In order to ensure greater equality of educational opportunity a floating scale of fees might be introduced whereby, in the cheaper schools, the percentage of total revenue collected in fees is considerably lower than the percentage collected in the more expensive schools. This would involve a considerable boost in the fees charged in the most expensive schools and could thus increase revenues.

(b) The simplest way of increasing revenues would be an over-all across-the-board increase in fees. This can be justified by the argument that the individual benefits considerably from the education he receives.

(c) Such an increase in fees is likely to lead to a decrease in the equality of educational opportunity of poor children (particularly if the increase is significant), unless accompanied by a loan or deferred payment system whereby pupils receive a loan to cover their educational expenses which they pay back after graduation. Even without an increase in fees, such a loan system is essential if certain professions are not to be restricted to the children of the rich.

(d) Parents should be encouraged to participate in the construction of elementary schools, not only to save money, but also to engender a sense of involvement.

(e) Where there is a high demand for education, particularly in urban areas, it should be possible to operate first- and second-level schools on a double-shift basis. If such double-shifting is to spread to other levels of education or to other areas of the country, it should be accompanied by an effective system of school zoning.

(f) If vocational and technical schools were operated on a sandwich basis, with students alternating between school and industry, not only would there be considerable savings in unit costs, but the training given would be likely to meet the needs of industry more closely.

(g) Considerable savings in capital costs can be obtained by using educational institutions for running part-time evening courses. It is even possible to charge a fee sufficient to meet the extra costs involved in opening such institutions in the evening.

(h) Schools and pupils should be encouraged to earn a significant proportion of their revenue by organizing movie shows, music and drama shows, school lunch programmes, fun fairs and parties, and school co-operatives.

(i) It is possible for schools to make discount arrangements with local traders where co-operatives do not exist, and thus a certain proportion of expenditures of teachers, pupils and parents might come back to the school.

(j) Through the organization of parent-teacher associations and alumni associations considerable quantiittes of donations could be mobilized.

(k) Pupils could be encouraged to produce goods for sale by the school. In addition, the menial and semi-skilled tasks on the campus could be carried out by pupils and in this way a respect for hard physical work might be instilled, at the same time saving the school some expenses on wages.

(l) A special training levy could be imposed on all industries using skilled manpower. The proceeds from such a levy would be used not only for financing formal and non-formal vocational training programmes, but also for modernizing the equipment in vocational schools so that it more closely meets the needs of industry.

(m) A specific tax for education on receipt and contract stamps (or even postage stamps) could be re-imposed. This would tend to fall most heavily on the beneficiaries of education.

(n) It should always be borne in mind that the way an educational system is financed also has an educational impact and this affects the decision-making process.

Introduction

Educational systems in countries all over the world are facing increasing problems on many fronts. While on one hand the educational aspirations of populations are growing at a fantastic rate, on the other there is increasing disillusionment among educationalists and others over the real effects of the school system on society and on individuals and how these effects often differ widely from the stated objectives. While larger and larger numbers of scientists, technicians and other specialist manpower are required for planned industrial and economic development, increasingly, economists are turning towards working out new 'stable state' theories aimed at producing development without growth and its consequent pollutant threat to the biosphere. While the pressure for expansion of the formal educational system for children and youth grows, so does the pressure for considering the education of people throughout their entire lives as a top priority activity. In addition, there are a whole host of problems of a financial nature. For example, during the 1960s educational budgets grew much faster than either enrolments, population or gross domestic product (GDP) in most countries, while, at the same time, most occupations required increasingly high formal educational qualifications; in most developing countries the costs of second-level education per pupil are several times that of first-level education, while the costs of university education are several times higher again. Thus, given the relatively low levels of GDP *per capita*, second- and third-level education are likely to remain the prerogatives of a small élite. Finally, many of the less industrialized countries are burdened with large poor-quality educational systems, the standards of which are difficult to improve due to the priority claim that increasing enrolments have on available budgets.

Whereas during the 1950s and early 1960s any expansion of any type or level of education was considered to be beneficial, now, with large numbers of educated unemployed, with high drop-out rates at all levels of education, and with many drop-outs from first-level school lapsing rapidly into illiteracy, the need for more modest aspirations based on a careful evaluation of existing systems is becoming apparent.

Because of the crucial role that modern education plays in society, distributing well-paid jobs and social status with its diplomas, there is always likely to be a

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very great social demand for places in educational institutions, not so much for the education itself, but for what this education will buy when completed. Thus education is, and will remain for some time, an incredibly political field of activity. If educational decisions affecting large numbers of people are not to be made as the result of pressure from one group or another, it is essential that the system be carefully planned with as many of the implications of alternative strategies worked out as possible.

Although the strategies for educational development differ from country to country, with some concentrating on producing the manpower needed for industrial development and others using the educational system to increase the standards of living and the level of awareness of the mass of the population, all strategies require scarce resources, both financial and human, to a greater or lesser degree.

Increasing quantities of financial resources will be needed for education, whatever strategy is chosen, just to maintain the present system. Therefore, it is becoming more and more important to make longer-term projections of the availability of financial resources under different alternatives, as well as to investigate the possibility of using new untapped resources for education if the need is proved.

Thus, in this study we will concentrate on the costing and financial aspects of education, not because these are necessarily the most important aspects, but because, before any other educational or non-educational objectives can be met through the educational system, sufficient financial resources must be made available.

Although Thailand is of course not a typical developing country (if there are any typical countries) as far as education is concerned—it has never been colonized and has a long tradition of basic education provided at Buddhist temples—it is hoped that other countries will be able to benefit from its experience. Some of the more important lessons have already been outlined in the summary of conclusions in the opening section of this paper, and others will be explained in the text. It is also hoped that the techniques used and the alternatives chosen will be of some assistance to those trying to carry out similar studies in other countries.

In this study we will analyse past developments in the educational system and its financing, as well as past economic development, in order that we may make some tentative projections through to 1980 of the financial requirements of the educational system, and also analyse the steps that might need to be taken to raise sufficient financial resources.

The economic development of Thailand will be studied not because we consider that the main function of the educational system is to serve economic development, but because without economic development it will be difficult to finance the increased enrolments needed to meet the social and educational aspirations of the mass of the population. An educational system designed solely to promote economic development will inevitably be an élitist system producing only small numbers of high- and middle-level manpower for modern sector development. A country like Thailand, with more than 80 per cent of the population living in

the traditional rural sector and where the urban population already has very large advantages over its rural brothers, cannot restrict educational opportunity to the small numbers of people required for high-level positions, particularly as already in many occupations requiring a university degree or similar qualifications, there is some under-employment, if not unemployment.

It would seem that a lack of educated manpower in Thailand is not a serious problem and is certainly not a major constraint on development (although the present pattern of distribution of this manpower throughout the country, with the majority in Bangkok, is not conducive to development). However, lack of education in its broadest sense is a very great constraint on 'development', where 'development' is understood as an increase in the awareness, health, well-being and quality of life of the whole population.

To conclude this section it should be emphasized that Thailand considers that education is a powerful tool for 'developing' the country and improving the quality of life of the population, not just a tool for modern sector economic development. Economic development is, however, important since without it (or a radical redistribution of available resources, which is unlikely) the financial resources needed for an ambitious programme of educational development will not be found. Of course, there is a possibility of changing the internal operation of the educational system to reduce costs. However, given the difficulty of introducing rapid change in a monolithic system, this possibility (which will be considered in the following chapters) is not sufficient to solve all the financing problems and thus, in the medium term, new resources from economic development will be needed for education.

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PART ONE: ANALYSES
OF THE PRESENT SITUATION

A. Salient features of the Thai educational system during the 1960s

1. The Thai educational system

The structure of the Thai educational system

In 1960 a new National Scheme for Education was proclaimed changing the then existing system from 4-6-2-4 (four years of first level, six years of second level, two years of pre-university and four years for a first non-professional bachelor degree) to a 7-5-4 system (seven years of first level divided into a four-year lower cycle and a three-year upper cycle, five years of second level divided into a three-year lower cycle and a two-year upper cycle, and four years for a first degree). In addition in 1962 an Elementary Education Act was passed in accordance with the Karachi Asian Ministers of Education Conference extending compulsory education from the four years then in existence to seven years by the early 1980s. Since, at the moment, under 50 per cent of children in lower first level progress to upper first level it seems unlikely that this Karachi plan target will be implemented.

Although the structure of the main general educational system is now 7-5-4, other specialist parts of the system have slightly different structures. A full diagramatic representation of the structure of the entire formal education system is shown in Figure 1.

At all levels of education there are both public and private schools. Most of the private initiative in education is at the upper first level and vocational and academic second levels.

Thailand has an official age of entry into first-level school of seven. In the past large numbers of over-age children entered school. The recent tendency is for increasing numbers of children less than seven years old to enter school, and fewer and fewer over-age children. If present trends continue it is likely that by 1976 about half the new intake will come from seven-year-olds, and the other half from six-year-olds and younger children. This tendency for children to enter school at younger and younger ages is most marked in urban areas where, despite rapid expansion of pre-first-level schools, parents are still eager to have their children enrolled in the main stream of the educational system as soon as possible.

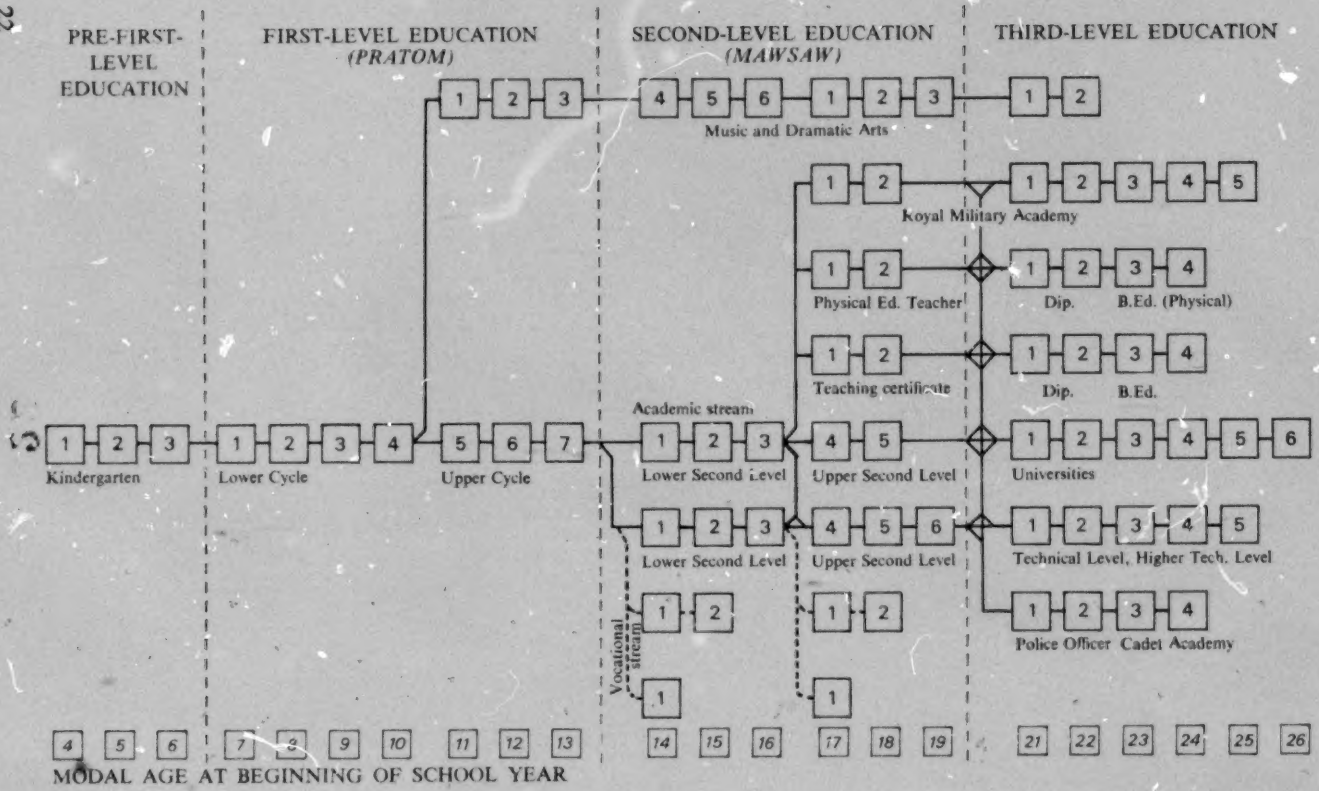

FIGURE 1. *The Thai school system by level and type of course.*

Geographically, lower-cycle first-level schools are spread evenly throughout the country, although there is a very large difference in standards between schools in Bangkok and those in the more remote areas. On the other hand there are very wide disparities in the opportunities for children to progress to upper-cycle first-level schools, varying from virtually 100 per cent in some *changwads* (districts) to less than 15 per cent in others. Strenuous efforts will be made to reduce these disparities during the current plan period (1971-76).

Second-level schools are at present concentrated in the central region of the country and in the towns. By the end of the plan it is expected that these inequalities will be reduced and the huge migration of pupils to the Bangkok area will be halted by opening schools so that there will be at least one second-level school in each *amphur* (sub-district).

Seven of the ten government universities are in the Bangkok area, whereas ten years ago all government universities were in Bangkok. During this plan no further efforts will be made to expand third-level education in the provinces, as it is felt that, before any new faculties or universities are opened, all existing institutions should be running at full capacity and, in addition, there should be a good chance of the graduates obtaining employment.

The administrative system is rather complex; the present structure is outlined in Figure 1 in Appendix I. Before the establishment of the National Educational Council (NEC) in 1959, the entire educational system was under the responsibility of the Ministry of Education, except for a few specialist universities (for example Kasetsart University was administered by the Ministry of Agriculture, and Mahidol University by the Ministry of Health). However, since then, parts of the educational system have been gradually transferred to other organizations, so that now the Ministry of Education is little more than a Ministry of Second-level Education. In 1959 all universities were transferred to the Prime Minister's Office, to be administered through the NEC. In 1963, Ministry of Education first-level schools situated in municipal areas were transferred to the municipalities and in 1966 virtually all the remaining public first-level schools were transferred from the Ministry of Education to the *changwad* administrations which are under the responsibility of the Ministry of Interior. The Ministry of Education remains responsible for a few hundred experimental schools and also for the pedagogical curriculum and supervisory aspects of the transferred schools.

Thus, there is a complicated and somewhat unclear system of administration with universities run by the Prime Minister's Office through the NEC; second level vocational, technical, teacher-training and some first-level and special schools run by the Ministry of Education; and non-educational aspects of the majority of first-level schools administered through local administrations by the Ministry of the Interior.

It can be imagined that educational planning in a country such as Thailand, with three different Ministries responsible for different levels of education and with a long tradition of departmental autonomy, is a very difficult and complex task. Not until 1963 was there any specialized planning office. In that year the Educational Planning Office (EPO) was formed in the Ministry of Education.

However, with the disintegration of the educational system, an office in the Ministry of Education could not be expected to plan universities and first-level schools effectively while they were under the responsibility of other Ministries. Thus in 1969 a new National Educational Council Act was passed expanding the activities of the NEC to cover over-all educational planning and co-ordination of different parts of the educational system.

It can be seen from the above very brief description of the structure of the system that the flexibility both of the educational system and of the organization of its planning and administration is absolutely apparent. There has been a great willingness on the part of senior officials to experiment with new systems, structures and administrative methods, despite the very large problems involved in introducing significant changes into any educational system. This bodes very well for the future, as there are a large number of good new ideas being discussed in educational circles, and if the past fifteen years can be considered as indicative, with its large number of changes, considerable significant improvements can be expected in the next decade.

The National Scheme for Education and Thailand's educational philosophy

The National Scheme for Education, which came into force in 1960, was the first real attempt in Thailand to clarify the educational objectives and to formulate an educational philosophy. Although many of the objectives outlined in the National Scheme were of a long-term nature, and were certainly not immediately implementable, they have provided and will provide useful guidelines for past and future educational plans.

The basic objectives of the National Scheme for Education can be summarized as follows.

1. The Thai people shall be educated according to their individual capacities, to become moral and cultured citizens with discipline and responsibility, with good mental and physical health and with a democratic outlook. They should also be given the knowledge and skills necessary to carry out an occupation useful both for themselves and for their nation.
2. Boys and girls should receive full-time education up to the age of fifteen.
3. Boys and girls should strive to gain knowledge and experience that will serve a useful purpose in their lives.
4. Education must serve the needs of individuals as well as those of society. It must also be in harmony with the economic and political systems of the country.
5. Four basic types of education should be given to all boys and girls: (a) moral education; (b) physical education; (c) intellectual education; and (d) practical education.
6. The state should educate the population of the country to as great an extent as its economic capacity will allow.

Obviously in any educational system there is usually considerable divergence between stated objectives and the actual situation, and it must be admitted that

the Thai educational system is no exception to this general rule. Despite the fact that two educational plans (1961-66 and 1966-71) have been completed since the National Scheme for Education was formulated, and a third (1971-76) started, the Thai educational system, particularly at the first level and lower second level, has still not yet met the stated objectives.

In some respects the Thai educational system can be seen as a synthesis of three almost inconsistent influences: the traditional acceptance of the views of hierarchical superiors; the emphasis on the individual and the four 'noble truths' of Buddhism; and the intellectual university and belief in 'qualifications' of Western societies.

Because of the desire for qualifications and the hierarchical social structure, education at the lower levels is very much a question of learning certain facts in a pre-ordained sequence. The teacher is copied and the textbooks are memorized. Despite this, and despite the fact that questions to the teacher are not encouraged, there is a great deal of respect between teacher and pupil. At the third educational level curiosity is encouraged, but a silent internal curiosity. Whereas Western society encourages intellectual freedom of the individual in society and in the physical world, in Thailand it is an internal freedom that is encouraged.

Still, it does appear that in some cases the educational system (or at least its most academic parts) is a foreign system placed in an alien environment with little relevance to traditional life as it exists in Thailand. Despite the fact that the system is based on a clear set of objectives, and despite all the efforts that have been and are being made to convert these objectives to reality, there is still a very strong tendency for institutions at all levels to concentrate their efforts on producing qualified candidates for the next higher level. There is a world-wide tendency for schools to teach what is needed for acceptance into further education rather than what individuals in that particular level might need to know. In a developing country such as Thailand, where socio-economic status is very closely related to the number of certificates and diplomas an individual might have, the pressures for the lower levels of education merely to act as steps for a small minority to climb the educational ladder are almost impossible to counter. There is likely to be little chance of these tendencies being reversed while the main function of the educational system remains that of classifying people for future economic and social benefits.

We have drawn attention to these philosophical issues for we feel that very often there is an insistence on continuous expansion of the educational system, particularly at the second and third levels. Such expansion takes place in order to meet the manpower requirements for 'economic development' while at the same time sufficient attention is paid neither to the effects such policies will have on the relevance of lower-level education, nor to the effects they will have on the structure of the social system. Further educational expansion is really justified only if it helps individuals to play a productive and useful role in society and to lead more fulfilling lives; not because of the certificates they have gained, but because of what they have learnt.

The rôle of non-formal education

Mass education of a Western formal type is a relatively recent phenomenon. The first formal schools were opened only about one hundred years ago, while a large proportion of the population was not enrolled in first-level schools until quite recently. We are not saying that there was no education in Thailand before this time, for obviously a society as well established as Thai society required an educational system of considerable sophistication over the past centuries. For example all boys would attend the local temple for several years, learning from the monks informally how to read and write and to do simple arithmetic. At the same time girls were often taught to read and write at home, as well as being taught housekeeping and cooking. In addition, skills were passed on from generation to generation through informal apprenticeship, and the historical and cultural values of the country through story-telling. For a stable society the education that was given in Thailand in the past was sufficient.

Despite the advent of formal education throughout the world, a great deal of the learning that occurs in a person's life takes place outside the formal educational system. Radio, clinics, work situations, exhibitions, extension services, TV, cinema, political events, military service, prisons, the royal family, religious affairs, village and community groups, books and newspapers, coffee shops, theatres and folk plays, advertising, conferences, music, sports, the market place, the home, clubs and other social groups; all these institutions and activities are continuously 'educating' different sections of the population. However, apart from these activities with a direct and indirect educational impact, Thailand has at present both a rapidly growing system of out-of-school education run by various government departments and a very effective system of on-the-job and apprenticeship training in traditional and simple modern skills. This latter system is particularly effective among the Chinese community.

Unfortunately, it is only among the government schemes of out-of-school education that there are any hard data. But similarly, it is only these governmental activities that call upon and use scarce financial resources and thus fall under the scope of this study. Thus, despite our conviction that these private out-of-school activities, as well as other 'educational' activities mentioned above, are of the greatest importance, no attempt will be made to bring them into the main body of this study. However, we would like to emphasize the need for considering *all* '*educative*' *influences* on a society if any attempt is being made to plan the educational system of a particular country comprehensively.

Government-organized out-of-school non-formal education has a relatively short history as the first schemes were not started until 1940. In the central government there are seven different organizations in four different ministries offering out-of-school programmes for the general public. Apart from these seven organizations, there are nineteen other government and parastatal organizations, such as the army, the police and the state railways, offering non-formal courses, not for the general public but for their own staff. These courses generally involve skilled and technical training and in 1968 had around 12,000 participants.

In addition many of the larger private companies also have their own on-the-job training programmes for their own workers. Despite all these activities, we will concentrate our attention on the non-formal courses that are offered by various government departments for the general public. The seven organizations running such schemes are the following.

Ministry of Education
1. Adult Education Division in the Department of Elementary Education.
2. Vocational Promotion Division in the Department of Vocational Education.

Ministry of Interior
3. Skill Training Centre in the Department of Labour.
4. Rural Leadership and Vocational Training Centres in the Department of Community Development.

Prime Minister's Office
5. Rural Youth Vocational Training under the National Youth Promotion Committee (NYPC).
6. Vocational Training Centre under Accelerated Rural Development (ARD).

Ministry of Defence
7. Vocational and Training Centres in sensitive areas under the National Security Council (NSC)

Details of the number of centres, teachers, and students enrolled in each of the above schemes are shown in Table 1 overleaf.

It can be seen that there has been an extraordinary expansion in all types of adult out-of-school education organized by the government for the general public. This expansion has been particularly large in the vocational field, with enrolments increasing more than three-and-a-half times over the four-year period.

Despite the recent rapid expansion of governmental out-of-school education, it is still only of very marginal importance compared with the formal system. For example, of the 7-24 age-group, more than 57 per cent are not in school and, of these, only about 1 per cent are participating in any type of governmental out-of-school education. Whereas over 18 per cent of the national budget went to formal education in 1971, under 0.3 per cent went to out-of-school education, that is to say only about 1.6 per cent of the total educational budget was used for out-of-school education.

It is surprising in fact how little attention is paid to out-of-school education in Thailand, as it is demonstrably a much more effective way of achieving given educational objectives than the formal system. The Division of Adult Education runs courses which are accepted as equivalent to the formal school system. With these courses, which take place in the evenings (three hours an evening, five days a week), it takes only one year for a pupil to pass the exam. at the end of the fourth year of first level and only a further five years of part-time study to complete the next eight years of the formal system. As the fees charged for these

TABLE 1. Government out-of-school training centres giving courses for the general public, 1967 and 1971

Functional offices	Schools		Teachers		Pupils	
	1967	1971	1967	1971	1967	1971
Vocational						
1. Adult Education	—	293				
a) Fixed Centre	—[1]	218	554	930	4 320	22 080
b) Mobile Unit	—[1]	75				
2. Vocational Promotion	10	49				
a) Mobile Unit		45	165	552	9 335	26 189
b) Polytechnique		4				
3. Skill Training Centre	—[1]	1	—[1]	72	—[1]	1 624
4. Community Dev. Dept.	—[1]	14	—[1]	102	—[1]	791
5. NYPC	—[1]	1	—[1]	43	—[1]	80
6. ARD	—[1]	1	—[1]	25	—[1]	326
7. NSG	4	10	16	50	176	405
TOTAL	14	369	735	1 774	13 813	51 496
Academic						
1. Adult Education	347	496	—[2]	2 635	19 534	34 110
GRAND TOTAL	361	865	—[2]	4 409	33 347	85 606

1. Not in operation in 1967
2. Data not available.

courses cover all but the indirect costs, this means that people can complete the whole of their first- and second-level education through part-time evening study in half the time it takes in the formal system at only a fraction of the cost to the government of the equivalent full-time education. The success rates seem to be roughly equivalent to those of the formal system. Similar but less exact comparisons can be made between other out-of-school educational activities and the formal system. Such comparisons are less exact because the qualifications received from the out-of-school system are not necessarily equivalent to those of the formal system. However, it does not appear likely that very large savings could be made if parts of the formal vocational system were non-formalized.

One notable feature of the organized non-formal system is its fragmentation, with a large number of organizations offering similar types of training, often in the same place, with almost no co-operation between the various organizations. For example, twenty-eight of the Adult Education Division's vocational training centres are located at the same centres as the Department of Vocational Education, and frequently different organizations offer courses in the same subjects; for example, five of the organizations train people in motor mechanics.

The Thai government is becoming increasingly aware of the importance of non-formal education and also of the need to co-ordinate all the various activities so that they have the maximum possible impact. In 1972 a high-level committee was established to recommend a procedure to co-ordinate all the different activities and make them more effective. In its preliminary recommendations this committee has suggested that the Adult Education Division be upgraded to a department and that this department take over the out-of-school activities of the Vocational Department, and also the curricula, teaching materials and supervisory activities of all the other organizations outside the Ministry of Education. It is still too early to say whether the many problems involved in implementing these recommendations can be overcome. Nevertheless, the mushrooming of out-of-school enrolments in recent years and the establishment of the high-level committee does show the great importance that the Thai government is attaching to all forms of out-of-school education.

Thailand already has a well-established educational broadcasting service which, as well as transmitting four and a half hours of school programmes per day, also broadcasts three hours of educational programmes for adults in the evenings and a one-hour programme for teachers each lunch hour. There is no organized national system of educational TV at the present time (scheme is likely to start during the next few years). There are nine TV stations in various parts of the country and some of the programmes transmitted are intentionally educational, as are many of the programmes broadcast from the 147 radio stations now operating all over the country.

To conclude this section one further activity should be mentioned, and that is the effort of the government to solve the problem of teacher shortage by introducing 'twilight' (evening part-time) training of teachers. This programme, which started on a large scale only in 1969, already has equal enrolment with the full-time system.

In many different types of educational activity there is an awareness of the difficulty of meeting the economic, manpower, and social requirements of education with the very limited budgets available, and increasing numbers of organizations turn to non-formal and out-of-school alternatives for solving problems which are insurmountable through the formal system.

2. Enrolments during the 1960s

Quantitative expansion during the first and second plans (see Table 2)

During the 1960s Thailand implemented two national Educational Development Plans, both integral parts of her socio-economic Development Plans. The First Educational Development Plan (1961-66) had as its main objective the expansion of enrolments at all levels to accomodate not only the tremendous growth of the school-age population, but also the rising social demand for education. At the same time it was planned to improve the quality of education. Although these

two major objectives were still maintained in the Second Educational Development Plan (1967-71), special emphasis was placed upon the production of middle- and high-level manpower, in order to meet the manpower requirements of the planned social and economic development. Education for rural development was also emphasized in order to attempt to lessen the wide disparities of income between the rural and urban areas, and between the agricultural and industrial sectors.

FIRST LEVEL

By the beginning of the 1960s Thailand had virtually achieved universal compulsory four-year education. However, following the recommendation of the Karachi Plan adopted in 1960, the government committed itself to the expansion of compulsory education from four to seven years of schooling. With a view to achieving this commitment and the national goals for educational development, the government has built and expanded an increasing number of first-level schools throughout the country. Consequently, during the past decade enrolments at the first level have increased very rapidly, from 3.9 million in 1960 to 5.7 million in 1970, an increase of 46.15 per cent. Expansion at the upper first level from 0.4 million in 1960 to 0.9 million in 1970 (an increase of 125 per cent) has been much more rapid than expansion of the lower first level. Still, Thailand is a long way from compulsory seven-year education since the over-all progression rate from P4/P5 (first-level 4th grade to 5th grade) was about 44 per cent in 1969/70. In two districts it had already reached 90 per cent, while in half a dozen other districts it was less than 20 per cent.

At the lower first level there are fewer problems. In the southern part of the country, where a large proportion of the population are Moslems of Malay origin, supporting unofficial Moslem *ponok* schools, enrolment in the formal system is not universal. In addition it seems that the expansion of lower first-level school places has not kept pace with the growth of school-age population in Bangkok/Thonburi municipal area, as a recent survey showed that over 5,000 children of compulsory school age were not enrolled in any school. Details of the first-level enrolments over the past decade can be seen in Table 19 in Appendix I.

SECOND LEVEL

At the second level in Thailand there are both vocational and academic streams, as well as professional training for teachers and technicians. Twenty schools were converted to fully-fledged comprehensive schools with Canadian government assistance at the beginning of the second five-year plan, and now the government is embarking on a country-wide programme of upgrading any existing academic schools into a type of comprehensive school.

Enrolments in lower academic second-level schools grew at the relatively slow rate of about 3.6 per cent per annum between 1961 and 1965. During the later

TABLE 2. Enrolment trend (thousands)

	1961	1963	1965	1967	1969	1970	1971
First level	4 093	4 291	4 630	4 983	5 269	5 604	5 697
General second level (public and private)	271	303	319	359	445	506	572
Lower	236	262	271	309	393	446	507
Higher	35	41	48	50	52	60	65
Vocational second level (public)	18	34	39	48	53	58	94
Lower	1	6	5	6	4	4	5
Higher	17	28	34	42	49	54	89
Total second level	289	337	358	407	498	564	666
Teacher training	14	15	17	22	31	37	44
GRAND TOTAL	4 396	4 643	5 005	5 412	5 798	6 205	6 470

part of the decade enrolments increased much more rapidly, i.e. at an average of over 10 per cent per annum. Enrolments at the higher second level increased relatively slowly throughout the whole period. In vocational schools the early part of the decade saw a very rapid expansion in both the lower and upper levels, with upper vocational public enrolments growing at an average of almost 15 per cent per annum between 1961 and 1965. It became apparent not only that vocational education was very much more expensive than academic education, but also that vocational second-level education was not particularly effective unless the schools were well staffed and equipped with modern machinery. Thus, during the latter part of the decade, it was decided to abolish lower vocational schools gradually and to slow down the rate of expansion of upper vocational enrolments so that the greatest possible amount of resources could be devoted to quality improvements.

Total second-level enrolments virtually doubled during the 1960s with by far the fastest rate of growth taking place towards the end of the decade. This phenomenon of the rate of increase in enrolments increasing dramatically around 1969 is common to all levels and types of education, especially at the upper first level, the lower second academic level and in teacher education. From the statistics it appears that there was a strenuous effort made to control enrolments at all levels during the decade, but throughout the 1960s pressures grew for greater expansion, until by 1969 or 1970 a new policy of rapid expansion, with all its inherent manpower and financial problems, was embarked upon.

TEACHER TRAINING

In teacher training, despite the controlled rate of expansion in enrolments in other parts of the system, teacher shortages tended to become more severe,

so there was a great acceleration of enrolments at all levels during the second-plan period, as can be seen in Table 25 in the Appendix I. There are two basic levels of teacher training apart from those at the Bachelor degree and equivalent levels: a two-year course after lower second-level education, leading to a teacher-training certificate; and a two-year course after higher second-level education, or after the teacher-training certificate, leading to a diploma. In addition, in 1967, a new accelerated certificate course was started taking only one year after completion of higher second-level education.

Diploma enrolments increased more rapidly than certificate enrolments during the later part of the decade. This is because it is intended that, in the long run, all certificate training should be replaced by diploma training.

At the degree level there are now a large number of different programmes for training teachers. The most important of these is that taking place at the college of education and its seven branches throughout the country. The programme at the college of education leading to a Bachelor's degree, either takes two years after the teaching diploma, or four years after higher second-level education or the teaching certificate. Enrolments at the college of education increased three-and-a-quarter fold over the decade to about 5,000 in 1970,

There are also now many universities offering courses leading to B.Ed. degrees. In 1960 there was only one university with a faculty of education, while by 1970 there were six.

So rapid has been the expansion of degree-level teacher training that it is likely that all shortages at this level will be overcome during the next few years without any further expansion. Finally, there are the evening programmes of part-time teacher training started in 1969 which now have enrolments almost as large as the full-time courses.

THIRD LEVEL

At the technical level there are many different courses, usually starting after upper second-level education and lasting two, three or four years. Some are designed to train technical and vocational teachers, others highly skilled craftsmen, while yet others are aimed at producing technicians. In total there was very little expansion in enrolments between 1961 and 1965, but during the period 1965-70 the rate of increase in enrolments accelerated to almost 19.9 per cent per annum. In addition, in 1970 the three technical institutes offering the highest level of training were upgraded to form a new Institute of Technology empowered to award university degrees in engineering. This upgrading produced a significant gap in the training of higher technicians which will be made up through the expansion of other technical institutes during the third five-year plan period. The pressures for upgrading middle-level educational institutions to colleges that can grant university degrees, while middle-level manpower is often in greater shortage than high-level manpower, is a problem that exists in most developing countries. There is no easy solution. With the many benefits to be gained by individuals (both economic and social) on obtaining a university degree, quite

obviously there will always be tremendous pressures to upgrade institutions and to expand third-level enrolments faster than is economically justified.

It is thus quite surprising that third-level education enrolments underwent a very moderate expansion of only about 6 per cent per annum throughout the decade. So tight was the control of third-level education enrolments that Thailand is probably one of the few countries in the Asian region that is not confronted with a significant problem of university graduate unemployment at the present time.

It should be noted, however, that while at the beginning of the decade all five existing universities were in the Bangkok area, by 1964 Chiang Mai University was opened in the north of the country, in the same year Khon Kaen University was opened in the north-east, and in 1967 Songkla University was opened in the south. In addition four new branches of the college of education were opened in the provinces.

During the first plan period much of the expansion that took place in university enrolments was in the general and non-professional faculties. The second five-year plan period emphasized the expansion of the professional faculties, with, for example, four new engineering faculties being opened, as well as several new medical and agricultural faculties.

The controlled expansion of the 1960s has given way in the first years of the 1970s to a much more rapid increase in enrolment, particularly in peripheral forms of third-level education. For example, in 1971 not only were six private colleges given degree-granting status, but a new government-sponsored (but largely self-financing) open university was created which has an initial first-year intake about equal to the total enrolment in the nine existing traditional universities supported by the government.

PRIVATE EDUCATION

The private sector plays an important and significant role at all levels of education, except in teacher training. At the lower first level, the proportion of total enrolments in private schools has been rising very slightly (probably reflecting the lack of emphasis placed by the government on this level) from 8.4 per cent of the total in 1963 to 10.9 per cent in 1961. At the upper first level, where the government has devoted considerable attention recently, the share of the private sector in total enrolments has fallen from 47.9 per cent in 1963 to 38.3 per cent in 1969 and only 31 per cent in 1971. In general, private schools at the first level are low-quality institutions with poorly qualified teachers and higher wastage rates than the equivalent public schools. For example, the progression rate from P1 to P2 is only about 50 per cent in private first-level schools, which suggests very high rates of drop-out or repetition or both. In the third five-year plan almost no growth in private lower first-level intakes has been suggested, but instead various proposals have been made to increase progression rates within private schools.

At the lower second level the share of private enrolments in the total increased from about 46 per cent in 1963 to roughly 52 per cent in 1968. This increase took

place before the period when government enrolments again began to increase rapidly, and the share of the private sector fell back to 44 per cent by 1971. The same trend was also apparent with private enrolments at the higher second level. In 1964 the share of the private sector was 52.4 per cent; in 1968 it had risen to 54.6 per cent; in 1969 it fell to 47.8 per cent and by 1971 it had fallen again to 44.2 per cent.

In second-level vocational education it is very difficult to compare enrolments in public and private schools, for many of the private schools do not necessarily offer the full three- or six-year vocational courses, but often only various short courses. In fact there are as yet no statistics of private vocational schools which are reliable enough to use.

Until 1971 there were no private third-level colleges. The six private colleges which were inaugurated in that year, competing with both the ordinary government universities as well as the new open university, had relatively small enrolments. In 1971 the share of the private sector in total enrolments at the third level was less than 5 per cent, even excluding the open university from the public sector. Even if all Thai students studying abroad were considered as private students (which they are not) the share of the private sector would still be less than 10 per cent.

Thus at both ends of the educational system the private share in total enrolments is very small, while in the middle it rises to almost half. In the past two or three years the expansion of public enrolments, in response to both the popular demand for education and to the poor quality of private education, has reduced the private share in total enrolments considerably and thus increased the financial burden on the government. In the long run it could prove cheaper and more effective to help private schools expand their enrolments and improve the quality of their instruction, rather than have the government take over the whole burden of operating a greater and greater share of the total educational system.

Private schools, however, are hampered in their efforts to expand enrolments and increase the quality of their programmes by legislation that limits the maximum fees they can charge to about *two-thirds of the unit recurrent costs* of government second-level schools. With this fee not only do the schools have to pay all their running costs, but they have to use the same income to make whatever capital investment is necessary. Obviously no private second-level school could offer a good curriculum in suitable buildings with such a low fee and, hence, they either give bad quality instruction or charge 'tea money', an illegal down payment (often ten or more times the level of the school fee) that the parents have to pay before the child enters school.

Under present conditions, if a private school wants to receive a subsidy, it must not charge more than 300 baht per annum school fee ($15 or about one quarter of the unit recurrent cost of government second-level education).[1]

Thus, at the moment, the system is designed to give no encouragement to

1. Exchange rate 1972, US $1 = 20.83 baht

33

private schools, so that each year the government has an increasing proportion of the total financial burden of education falling on its shoulders.

Evolution of enrolments compared with population

One of the main problems, both in examining educational progress over the last decade and in making projections of future enrolments, was the lack of any absolutely reliable population figures. Before the 1970 population census took place it was assumed that the population of Thailand was growing at about 3.3 per cent per annum. The census itself showed a figure of only about 2.7 per cent per annum. It was felt by many demographers that there had been considerable under-enumeration in the census and that the real growth figure should be somewhere between the two figures.

Table 3 summarizes some of the enrolment ratios of different levels of education.

TABLE 3. Enrolment compared with population of national age-group (%)

	Age-group	Enrolment ratios		
		1961	1965	1969
Lower first level	6-10	93.5	95.9	93.1
Upper first level	11-13	17.7	20.6	28.4
Lower second level	14-16	12.8	12.7	16.8
Upper second level	17-19	3.3	4.3	4.6

It can be seen that at all levels of education (except lower first level) there was an increase in enrolment ratios, particularly at the upper first and lower second levels during the later part of the period.

Finally, comparing all third-level education and equivalent enrolments, the enrolment ratio increased by 50 per cent over the decade; from 0.5 per cent in 1960 to 0.75 per cent of the four-year notional age-group (19-22) in 1970.

Quantitative indicators of qualitative improvement (see Tables 20, 21, 23 and 24 in Appendix 1)

During the period 1964 to 1969 there appeared to be no significant trend of reduction in either repetition, drop-out or examination success rates for first-level and lower second-level education. Drop-out rates were not too high, and with the exception of promotion between levels (i.e. P4 to P5, or P7 to MS1, and also between P5 and P6), the rates were generally less than 5 per cent. Repetition rates, however, were much higher, varying from 23 per cent in P1, to about 12 per cent in P2 and P5, 10 per cent in P3, MS1 and MS2, and to between 5 per cent and 8 per cent at P6, P7 and MS3. For some inexplicable reason there appeared to be almost no repetition at P4, the last grade of the lower first level.

Drop-outs and repeaters have a significant effect on the costs of education. We have calculated that at present it requires 4.7 years of education for one pupil to go from P1 to P4. We have also estimated that, by introducing a scheme of automatic promotion in first-level schools, about 300 million baht (or $15 million) could be saved per year. As this is almost 10 per cent of the total governmental educational expenditures in 1970, the introduction of an automatic promotion scheme would considerably ease the financial problems at present burdening the educational system.

The highest wastage rates of all exist in upper second-level academic schools, with about 40 per cent of pupils in private schools repeating MS4, 20 per cent repeating MS5, and about 15 per cent of pupils dropping out. Even in government schools the wastage is very high, with over 25 per cent repeating MS4, 10 per cent repeating MS5, and again about 15 per cent dropping out. The reason for these very high wastage rates is that the reputation of schools depends more on the proportion of their final-year pupils who qualify for university entrance than on any other factor; thus the schools tend to keep pupils back until they feel that they have a good chance of passing their examinations.

Vocational schools are the only part of the educational system where there has been a significant reduction in wastage rates. The reduction is illustrated in Table 4.

TABLE 4. Wastage rates in upper second-level vocational schools, 1963/64 and 1969/70 (percentage)

	Repeater			Drop-out	
	MS4	MS5	MS6	MS4/5	MS5/6
1963/64	26	24	15	10	2
1969/70	15	7	3	10	6

In teacher training, where a credit system is used, it is rather difficult to talk in terms of repetition rates, as pupils can repeat just one semester in order to obtain the necessary pass marks. However, it does appear that there is the equivalent of about a 15 per cent repeater rate in all types of teacher education, except for the diploma level where the rate is about 20 per cent. Drop-out rates appear to be negligible at about 2 per cent.

There is considerable wastage in universities, with again no significant trend of reduced repetition or failure rates. There very large differences between faculties. Table 5 illustrates the first-year repetition rate and the final-year pass rate by field of study for the year 1968/69.

Despite the fact that drop-out and repeater rates within any given level of education have not improved much during the past few years, the drop-out rates between levels have changed considerably, particularly between P4 and P5 where the gross progression rate has increased from 25 per cent in 1964/65 to

TABLE 5. First-year repetition rate and final-year pass rate by field of study, 1968/69 (percentage)

	Humanities	Education	Social sci. & law	Nat. sci.	Engineering	Medical	Agriculture	Fine art
1st year repetition rate	4.8	22.3	6.3	15.2	19.8	8.5	3.4	3.4
Final year pass rate	68.8[1]	79.9	42.1[1]	88.2	86.2	100.3[2]	90.9	89.3

1. The apparent low pass rate is due to the fact that Thammasat University (concentrating on arts and social science) has many students enrolled for up to eight years, but all students in the statistics who have been in the university more than three years are included as final-year students.
2. Pass rates of more than 100 per cent are possible since students who failed the examination in previous years are allowed to retake the examination without being enrolled in the final year.

over 44 per cent in 1969/70. During much of the decade the progression rate from P7 to MS1 has fluctuated around the 90 per cent mark. Recently this progression rate has begun to fall and in 1970/71 it was 86.4 per cent.

Since 1963 the proportion of those pupils from MS3 able to find a place in third-level education has fluctuated around 80 per cent (i.e. only 20 per cent of the MS3 qualifiers have had to find employment). With the recent rapid expansion of lower second-level enrolments, it is likely that within the next year or two only 50 per cent of MS3 will find places in third-level education and the other 50 per cent (of a much larger MS3) will have to find employment.

At the higher second-level schools about 80 per cent of the qualified output of MS5 have been able to find places in universities.

In the past the Thai educational system has been characterized by a barrier after the end of P4 and, thereafter, very high progression rates from one level of education to the next. The government intends to remove the barrier after P4, so that there is 100 per cent progression from P4 to P5 as soon as possible. The barrier will have to be placed somewhere else, probably after P7, for it is obviously not possible to have high progression rates between every level in the system. Politically, it is very difficult to change a high progression rate into a much lower one because people get used to whatever the progression rate was. The next few years will be characterized by the continued trend of rising progression rates between P4 and P5 and rapidly falling progression rates between higher levels in the system. It can be expected that some time soon a decision will be forced upon the government as to where the progression rate barrier should be replaced.

As far as examination pass rates are concerned, the rates at all terminal levels of education have remained high over the last decade. For example, the P4 pass rate has remained at around 94 per cent from 1964 to the present time (the P4 exam. is the only terminal examination not organized on a national level). Similarly with the P7 pass rate, which has remained at about 94 per cent. The MS3 pass rate remained quite constant at around 95 per cent until recent increases in enrolments entailed a reduction to around 92 per cent in 1971. At the MS5 level there has been a significant improvement from a 66 per cent pass rate in 1967 to 80 per cent in 1971, but at the same time there has been a worsening of

pass rates in private schools at MS5, falling from 52 per cent in 1966 to 43 per cent in 1971.

We will not dwell too much on these examination results as we are not convinced that the examination system in Thailand (or anywhere else in the world for that matter) is a good indicator of educational achievement, if education is understood as something more than just memorizing facts and texts.

There is in Thailand a very great concentration on examinations throughout the system, with an end of year exam. for each pupil in every grade. A pupil is not allowed to progress to the next grade unless he passes this examination. With important yearly examinations, quite obviously the whole educational system must devote a very large proportion of its energies towards examination teaching, with the consequent reduction in real learning that takes place in the classroom.

The current examination system is probably responsible for the high repetition rates discussed above. If any real reduction in repetition rates is to be obtained, there will have to be a complete overhaul of the examination system and a reduction in the number of examinations.

3. Teacher characteristics

Pupil/teacher ratios

Except at the first level in schools under the Ministry of the Interior, pupil/teacher ratios in Thailand seem to be very favourable. Table 6 summarizes the movement of pupil/teacher ratios over recent years.

TABLE 6. Pupil/teacher ratios, various levels and types of education, 1965 and 1970

	1965	1970
First level, Ministry of Education	34.5	24.7[1]
First level, Municipal	...	31.0
First level, Ministry of the Interior	—	36.1
First level, private	23.6	25.5
Second level, academic, public	16.0	21.0
Second level academic, private	16.9	22.1
Second level vocational, public	9.0	13.0
Technical, public	6.6	6.6
Teacher training, full-time (including College of Education)	11.7	12.3

1. Most public first-level schools were transferred from the Ministry of Education to the Ministry of Interior in 1967.

Such low pupil/teacher ratios are probably the result of several factors; firstly, the low salary (compared with private sector earnings) paid to teachers, which

means that large numbers of teachers have other employment, even during the normal working day; secondly, because of the generally poor qualification of teachers; thirdly, because most administrative personnel are classified as teachers (in public secondary schools 9 per cent of those people classified as teachers are in fact mainly concerned with administration); and fourthly, because some of the staffing standards are either incorrectly calculated or badly applied.

Pupil/teacher ratios have become slightly higher due to the expansion since 1969. Nevertheless, there seems to be little justification for the wide variations in pupil/teacher ratios between different organizations at the same level. Nor are these differences due to class size, as for example, the present teacher/class ratio in Ministry of Education first-level schools is about 1.5: 1, while in Ministry of Interior schools it is 0.9: 1 (i.e. there is less than one teacher per class). In second-level academic schools the ratio is 1.6 teachers per class, while in second-level vocational schools it is 3.7. A recent survey has shown that, whereas the standard teacher-pupil contact hours in second-level education are meant to be eighteen hours per week, in many vocational schools they are as low as ten hours per week.

There seems to be potential for reducing teacher costs in all levels and types of education, except in the Ministry of Interior first-level schools where there will have to be an increase in the teacher cost per pupil.

The range of student/teacher ratios at different universities, even in the same subjects, is so great that it is often difficult to believe that all the universities are in the same country. Table 7 shows the lowest, the highest and the average student/teacher ratio by field of study in 1969 in different universities.

TABLE 7. Range of student/teacher ratios and average by field of study in universities, 1969

	Low	High	Average
Humanities	7.0	11.7	7.9
Education	6.7	18.4	17.5
Fine arts	7.1	11.1	8.8
Social science and law	7.9	113.1	32.5
Science	2.1	11.8	7.7
Engineering	5.2	13.5	12.1
Medical science	2.0	4.4	4.5
Agriculture	3.0	11.2	10.0
			11.2

Obviously it cannot be expected that faculties in different universities at different levels of development would have exactly the same student/teacher ratios, but the wide range shown in the table has defied any simple logical explanation. There is, certainly theoretically, a very hreat potential for increasing student enrolment in selected universities, with almost no increase in teacher costs.

Qualification structure

Over the past few years there has been a steady improvement in the qualification structure of teachers at all levels of education. In particular the proportion of Bachelor degree (B.Ed.) and diploma (otherwise known as higher certificate) teachers has been increasing. For example, between 1966 and 1969 the percentage of higher certificate teachers in first-level schools increased from 11.5 per cent to 14.5 per cent while the proportion of B.Ed. teachers increased from 30.5 per cent to 34.6 per cent in public second-level schools and from 72 per cent to 78 per cent in teacher-training schools and colleges. This improvement in the qualification structure has obviously had an effect on average teacher salaries, which have tended to rise rapidly.

Table 8 shows the change in the over-all qualification structure of teachers (excluding those at universities). The actual numbers of teachers with each qualification are shown in Table 27 in Appendix I.

TABLE 8. Qualification structure of teachers, 1964, 1968 and 1972 (in percentages)

	1964 Act.	1968 Act.	1970 Prel. Act.	1972 Est.
Bachelor degree and above	4.5	6.2	7.3	8.7
Diploma or higher certificate	15.9	20.5	19.2	20.8
Certificate	31.1	36.7	51.4	52.5
Other	48.5	36.6	22.1	17.8
TOTAL	100.0	100.0	100.0	100.0

It can be seen that there has been a very significant improvement in the qualification structure of teachers since 1964. This has produced a large increase in teacher costs, but it also means that teacher qualifications, and thus teacher costs, are unlikely to increase at such a high rate over the next few years.

The only data available on the qualifications of university teaching staff are on the salary grade (which, although largely related to qualifications, is also related to age and experience). These data are shown in Table 30 in Appendix I.

Average teachers' salaries

All government teachers, whether they are poorly qualified teachers working in lower first-level schools or holders of Ph.D. degrees and teaching in universities, are civil servants and are paid according to government salary scales. In general the Thai government salary scales are qualification-orientated, with achievement in the formal educational system being the factor that is most responsible for determining an individual's salary.

During the 1960s the increase in the salary scale for government officials did not keep up with the rate of growth of GDP *per capita*. There were two salary increases, one in 1964 and the other in 1969. The first increased salaries at the lower levels (i.e. teaching certificate holders) by about 10 per cent and at the higher levels (i.e. Master's degree holders) by about 7 per cent; the second increased salaries at the lower levels again by about 10 per cent and at the higher levels by about 6 per cent. Thus even the maximum increase in civil servants' and teachers' salary scales is only about half the increase of GDP *per capita* over the same period. Even at the beginning of the decade government salaries were lagging behind those in the private sector, and now the gap is much wider with equivalent salaries of educated people in the private sector being three or more times the level paid to civil servants, even when account is taken of indirect benefits such as housing, medical care, etc.

However, even though government salaries are very low compared with the private sector salaries, they are not low compared with the GDP *per capita*. Table 36 in Appendix I shows the average salary per teacher in the different levels of education and compares this with GDP *per capita;* the average teacher earns between 3.6 and 6.8 times the average *per capita* income. Comparing these ratios with those that exist in many developed countries they do not seem to be too low, yet they are much lower than exist in most developing countries.

The relatively low level of teachers' salaries is one of the main reasons why Thailand has been able to realize such considerable educational progress despite her moderate GDP *per capita* (approximately $185 in 1971), but these salaries also contribute to the low productivity of Thai civil servants.

Despite this slower growth of teachers' salary scales, average salaries paid to teachers have still been increasing at a steady rate due to the improvement in the qualification structure mentioned above. For example, the average salary per teacher in second-level education increased by almost 24 per cent between 1966 and 1970. (It is expected that, in comparison, it will decline gradually during the third five-year plan period due to the falling average age and experience structure of teachers.) In the teacher-training department it increased by over 20 per cent between 1967 and 1971.

Average teachers' salaries in private schools are only about two-thirds of the equivalent in government schools: firstly, because private schools have very limited financial resources (due to the low level of approved fees); secondly, because most private schools are in the Bangkok/Thonburi area or other urban centres where it is now difficult to get government teaching posts (most vacancies being in the more remote rural areas); and thirdly, because the quality of private school teachers is often below the level of their government counterparts.

4. Budgets and finance

Evolution of educational budgets

The data for the very early years of the decade do not seem to be too reliable—for example, the statistics show that the educational budget fell by about 19 per cent between 1960 and 1961 and only regained its previous level after 1964. As the accuracy of the data on the earlier years is somewhat suspect and no accurate expenditure figures were available after 1969, it has been decided to restrict our comments in the following paragraphs to the period 1963-67, where the largest amount of hard and easily accessible data are on hand.

Total public expenditure on education increased at an average of 14.9 per cent per annum over the period 1963-69, moving from 2.6 per cent of GDP to 3.1 per cent. During the first six-year plan period (1961-66) there was a total expenditure on education of 11,640 million baht, but during the second five-year plan period (1967-71) this amount had almost doubled to 20,050 million baht, even though the first plan period lasted six years and the second only five.

However, the growth of recurrent educational expenditures was not very rapid and grew at a slower rate than total government current expenditures. The average rate of growth of current educational expenditures was only 11.6 per cent per annum over the period 1963-69, and education's share of current revenues fell from 16.3 per cent in 1963 to 13.3 per cent in 1968. The rapid increase in enrolments in 1969 caused it to rise again to 14.6 per cent.

TABLE 9. Evolution of total public expenditure on education and of GDP at factor cost (thousands of baht)

Year	GDP at factor cost	Public expenditure on education			
		Total	% of GDP	Growth rate (%)	
1963	60 430 000	1 559 135	2.58	↑	↑
1964	65 840 600	1 842 602	2.79	14.2	|
1965	74 577 700	2 033 860	2.72	↓	|
1966	90 242 700	2 255 255	2.50	↑	14.9
1967	95 512 800	2 688 267	2.81	15.3	|
1968	102 977 500	3 102 656	3.01	|	|
1969	115 246 500	3 597 066	3.12	↓	↓

SOURCE National Education Council and National Economic Development Board

There was a really phenomenal growth in capital expenditures on education over the period 1963-69, with an average increase of 34 per cent per annum. From 1963 to 1965 capital expenditures on education grew at 50 per cent per annum while in the latter part, even though enrolments were growing at a faster

rate, the growth rate declined to 27 per cent per annum. Whereas in 1963 educational investments only made up 1.2 per cent of total national gross fixed capital formation (GFCF), by 1968 this proportion had risen to 3.2 per cent and in 1969 was still over 2.8 per cent.

This very rapid growth in capital expenditure is not easy to explain. Part of the reason is certainly the very rapid rate of increase in building prices (the building price index increasing at an average of 6.8 per cent per annum between 1966 and 1970). Another part of the increase is due to the few budget scarcities, which meant that education was granted a greater proportion of its budget than previously and, as capital expenditures are a great deal more flexible than recurrent expenditures, the extra budgets received went mainly into capital programmes. It is also partly due to the fact that building standards were upgraded for many levels and types of education (for example, the teacher-training department started providing a much greater proportion of students with dormitory accomodation, abd teachers with housing). In addition, it seens that at the first level, parents and local communities are contributing less for school construction than before (the cost per place to the government at first-level school has increased almost threefold during the last few years). Three new regional universities have also been established since 1963, involving a very large initial capital investment. Despite all these factors, the main reason for the large increase is almost certainly the abnormally low proportion of educational expenditures going to capital items at the beginning of the period under consideration. This latter conclusion is supported by the fact that there was no clear emphasis in the proportion of total capital expenditures going to any particular level, although second-level education has more than doubled its share from 3.4 per cent in 1963 to 8.2 per cent in 1969. It is significant that there were only two large foreign aid projects over the period being considered, one for converting twenty second-level schools into fully-fledged comprehensive schools, and the other for upgrading twenty-four vocational schools.

The growth of recurrent expenditures was fastest at the university level, where it averaged 19.5 per cent per annum over the period 1963-69, and slowest at the second level, where it was only 2.3 per cent per annum. (However, the recurrent expenditures on second-level education were inexplicably high in 1963, and thus the growth over the period 1964-69, although still low, was 6.7 per cent per annum). Recurrent expenditures on first-level education were growing at 12.8 per cent per annum, in vocational education 13.0 per cent per annum and in teacher training 8.3 per cent per annum over the period. The high rate of growth in universities was due mainly to the establishment of three new universities and many new professional faculties, all with much higher unit costs than the past average. The lack of any effective control and the failure to insist upon any centrally calculated norms were also contributory factors. The low rate of growth of second-level recurrent costs was mainly due to a considerable increase in the pupil/teacher ratio.

From Tables 9 and 10 the obvious objectives of the two development plans in the 1960s were; firstly, to produce the high-level manpower thought necessary

TABLE 10. Trend of capital expenditure by level of education at current prices (thousands of baht)

	1963	%	1964	1965	%	1966	1967	1968	1969	%
First-level education	59 379	39.62	99 591	146 528	43.30	174 249	223 363	267 934	292 742	33.20
Second-level education	5 113	3.41	14 532	19 893	5.89	34 823	7 611	101 253	71 938	8.16
Vocational education	30 145	20.11	37 747	44 020	13.03	30 766	142 341	156 925	217 756	24.70
Teacher training	10 840	7.23	18 653	22 862	6.76	35 912	47 398	69 452	69 171	7.85
Universities	44 374	29.63	94 381	104 406	31.02	190 130	236 940	291 552	229 026	26.09
Total capital	149 851	100.00	264 904	337 709	100.00	465 880	657 653	887 116	880 633	100.00
Total expenditure on education	1 559 135		1 842 602	2 033 860		2 255 255	2 688 267	3 102 656	3 597 066	
Total capital expenditure as % of total expenditure on education	9.61		14.38	16.60		20.66	24.46	28.59	24.48	
Total GFCF	12 084 900		14 518 500	15 985 500		20 364 100	24 788 600	27 814 300	30 859 900	
Total capital expenditure on education as % of total GFCF	1.24		1.82	2.11		2.29	2.65	3.19	2.85	
Growth rate of capital expenditure on education (%)			1963-65			1965-69		1963-69		
			50			27		34		

TABLE 11. Trend of recurrent expenditure by level of education (thousands of baht)

	1963		1964		1965		1966		1967		1968		1969	
	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%	Amount	%
First level	892 588	63.34	1 068 449	67.72	1 159 125	68.33	1 211 127	67.68	1 336 764	65.83	1 436 793	64.85	1 836 117	67.59
Second level	273 24[illegible]	19.38	226 413	14.35	228 853	13.47	246 446	13.77	273 862	13.49	280 242	12.65	312 512	11.50
Vocational	87 9[illegible]4	6.24	91 026	5.77	107 031	6.31	112 956	6.31	147 635	7.27	174 163	7.86	183 221	6.74
Teacher training	52 6[illegible]9	3.74	52 910	3.35	55 346	3.26	59 486	3.32	67 249	3.31	74 628	3.37	85 010	3.13
Universities	102 [illegible]36	7.30	138 897	8.81	145 794	8.60	159 358	8.92	205 102	10.10	249 712	11.27	299 571	11.03
TOTAL	1 409 284[1]	100	1 577 697	100	1 696 151	100	1 789 374	100	2 030 614	100	2 215 540	100	2 716 433	100
GDP at factor cost	60 430 000		65 840 600		74 577 700		90 242 700		95 512 800		102 977 500		115 246 500	
Expenditure as % of GDP	2.33		2.40		2.27		1.98		2.13		2.15		2.36	
Current govt. revenue	8 633 000		9 646 500		11 157 000		12 711 600		16 865 100		16 649 800		18 579 300	
Recurrent expenditure as % of current govt. revenue	16.32		16.35		15.20		14.08		12.04		13.30		14.62	

1. Totals differ due to rounding.

SOURCE NEC and NEDB

for the country's economic development and, secondly, to expand first-level education so that compulsory seven-year first-level education could be achieved as soon as possible.

The 1960s was a favourable decade for education for GDP and government revenues were growing rapidly and virtually any project that could be justified could be financed. For the 1970s the situation is quite different because the rate of growth of GDP has slowed down and is likely to remain at a lower rate than that achieved during the 1960s, Consequently, government revenues will not grow so rapidly. In addition, the security situation in the country is becoming more severe and defence and related expenditures are growing, and will continue to grow, more rapidly than in the past. All in all, it seems likely that there will be increasing budget scarcities and educational budgets will not be able to increase at the rate they have maintained over the past few years. Already a slowdown is apparent; in 1970 total educational budgets increased by 18 per cent, in 1971 the rate of increase had fallen to 12.7 per cent and by 1972 had fallen further to 6.8 per cent. Much of this slowdown is due to a reduction in the proportion of total expenditure going to capital items, particularly in the vocational department, the universities and teacher training. For the latter, the proportion of the total expenditure going to capital items rose to a peak of 57 per cent in 1971, before falling back dramatically in 1972.

Evaluation and range of unit costs

No systematic study of unit costs at the micro-level has ever taken place in Thailand. For the purpose of this study not only was a detailed macro-analysis of unit costs carried out, both capital and recurrent borne by the government, but also a small random sample of school accounts from different types of schools was surveyed in order to find out the actual level of unit costs and the way in which these costs are financed. From such a sample it is obviously not possible to draw any firm conclusions, nevertheless, it did give an indication of the orders of magnitude of the problems.

In common with most other countries, both developing and developed, there is a very wide range in unit costs between the different levels of education. In this section we will describe our findings for each level and type of education separately.

FIRST-LEVEL EDUCATION

There are five distinct types of first-level education in Thailand, each with its own cost structure. Within the Ministry of Education there are at least two types of first-level school: ordinary schools left within the Ministry after the transfer of most schools to the Ministry of Interior; and special schools for the blind, the handicapped and other disadvantaged groups. As there are very few of these special schools and their costs bear little relationship to other parts of the system, we will not consider them in this paper. Under the responsibility of the Ministry

of Interior are local government and municipal schools. Finally, there are private first-level schools.

Table 12 shows the recurrent unit support received from the government by these various types of schools.

TABLE 12. Recurrent unit support paid by the central government for first-level schools run by different agencies and estimated total recurrent costs, 1969 and 1970 (in baht)

	Central government support			Estimated total recurrent unit cost 1969
	From macroanalysis 1969	From 1970 survey		
		High	Low	
Ministry of Education	738	702	582	753
Ministry of Interior				
Local government	430	429	228	435
Municipalities	23€	637	148	560
Private schools	...	191	—	290[1]

1. Very approximate estimate.

The most interesting aspect of the data in the table is not so much the extraordinarily high range of recurrent unit expenditures between schools run by different agencies, but the exceedingly wide range, both in recurrent unit expenditures and in government recurrent unit support, for schools run by the same agency.

In local government and Ministry of Education schools, where the central government supports the vast proportion of the recurrent costs (98 per cent or more on average) and where from 90 per cent upwards of recurrent expenditures are used for teacher salaries, this wide range in recurrent unit costs can be explained by an equally wide range in staffing both in terms of pupil/teacher ratios (or teacher/class ratios) and in terms of the qualification structure of the teaching force at different schools. The teacher cost per pupil per annum in local authority schools covered in our survey ranges from 204 baht to 423 baht, and in Ministry of Education schools from 562 baht to 693 baht. Unfortunately our sample of schools was not large enough to carry out multiple correlation analyses, but there appears to be no correlation at all between the size of the school and the level of recurrent unit costs. It just seems that some schools are more competent than others at obtaining approval for teacher posts. Schools in urban areas were generally much better staffed than similar schools in rural areas. There is certainly a need to establish universally-applicable staffing norms for first-level schools, for at present it seems that many first-level schools have too many teachers according to any objective criteria, while others (in the more remote areas, where it is likely that the teacher will have a much more significant impact on the whole

community) are severely understaffed. Too often the schools that *have* seem to be given more, while those that *have not* must continue to do without.

In schools operated by municipalities it is much harder to explain the differences in subsidies per pupil, for even though there was a much larger sample with data from all municipalities in the country (120), it was still not possible to find any rational correlation. The level of subsidy is not related directly or indirectly to the wealth of the particular municipality, with some of the poorest and some of the richest municipalities receiving the highest subsidy per pupil, nor is it related to the size or rate of growth of enrolments in the different municipalities, nor is it calculated as a fixed proportion of total recurrent costs. As far as can be seen it is dependent on nothing more than the different bargaining ability of different municipalities.

In private schools the subsidy paid (for first-level, second-level and vocational schools) is calculated according to the following formula (baht):

$$\text{No. of teachers to be subsidized} = \frac{280 \times \text{No. of classes}}{550 - (300 - \text{fee charged per annum})}$$

Exactly how this formula was devised it is difficult to say, but when it is applied, no subsidy is given to schools charging more than 300 baht fees per annum. A school charging the maximum allowable fee (300 baht) will have the salaries of about half its teachers subsidized, while one charging no fees will have almost all its teachers subsidized, but the rate of subsidy paid per teacher is less than the equivalent salary of a government teacher. A teacher with a B.Ed. degree is subsidized to the extent of 900 baht per month, compared with a government starting salary of 1,250 baht per month, while a teacher with a lower certificate receives a subsidy of 600 baht compared with the initial civil servants' salary of 750 baht. At the lower first level the government is prepared to subsidize only unqualified and lower certificated teachers, while at the upper first level half the teachers could be higher certificate or diploma holders.

With a 300 baht fee as the criterion for a school to receive a subsidy, it is surprising that many schools qualified. In fact, in 1966, 68.8 per cent of private school pupils were in schools which received some subsidy; by 1970 this figure has risen to 71.4 per cent.

One other interesting phenomenon of private school subsidies over recent years is that while enrolments in subsidized schools increased at 4.8 per cent from 1966 to 1970 (considerably faster than the over-all rate of increase of private school pupils), the number of subsidized teachers was increasing at 8.6 per cent (with subsidized Bachelor degree teachers increasing at 16.2 per cent per annum and subsidized unqualified teachers increasing at 6.5 per cent per annum).

Thus despite the low 'qualification fee' which, theoretically at least, is becoming increasingly difficult for any school to maintain (particularly at the second level), more and more schools and higher and higher qualified teachers are becoming subsidized.

This present system of subsidization does not ensure in any respect an optimum utilization of government resources for private education, but rather:

1. It encourages schools to offer very low-quality programmes (which they can finance with a low fee) or charge 'tea money' (an illegal entrance fee) or other extra fees.
2. It encourages schools to recruit poorly-qualified teachers who demand only a low salary. In fact there is no check to ascertain whether the subsidy ever gets to the teacher. In many cases it is claimed that private school teachers get paid even less than the subsidized rate.

   For example, in one of our sample private first-level schools the teacher cost per pupil was only 133 baht, one-fifth of the level in one of the Ministry of Education schools.
3. The schools are given absolutely no incentive to find their own financial resources, for as long as the school continues to fulfil all the various conditions, it will continue to receive a subsidy.

We feel that in the coming period of increasing financial scarcities, private schools have a very important role to play, but if they are to carry out their functions effectively, the role of government subsidies should be altered so that they encourage private schools firstly, to provide good quality programmes of instruction and, secondly, to become basically self-sufficient and self-financing organizations. We would, therefore, recommend the following:

1. Subsidies should be given to any private school that is not charging more than three-quarters of the recurrent unit cost of an equivalent government school in total fees. Such subsidies should be given to a particular school only for a fixed period of time, certainly for not more than ten years.
2. Subsidies should be paid not in cash, but rather in materials, equipment and the secondment of government teachers, thus avoiding possible misuse of government resources.
3. The situation in each school should be studied before any subsidy is given and on this basis the most urgent additional needs of the school should be analysed. The requisite teachers, equipment and materials could then be supplied to bring the resources available at the particular school to an acceptable level. A contract should then be drawn up, showing how the school would gradually take over responsibility for the subsidized items and personnel.

If the above policy were implemented, the subsidy would be used as a tool specifically designed to improve the quality of private schools and to encourage them to seek their own sources of revenue.

As far as the capital costs of first-level education are concerned, the only reliable information available is on government capital expenditures. In local authority schools there has been an extraordinary increase in government investment per place, as follows (baht):

	1963	1964	1965	1966	1967	1968	1969	1970
Av. cost to govt. per place	350	930	1 470	1 260	1 860	1 480	1 570	2 630

Taking account of local government, municipality and community contributions, the level of unit capital costs was estimated as shown in Table 13.

TABLE 13. Estimated average capital unit costs by administrative organization, 1968 and 1969 (in baht)

	1968	1969
Local authority schools		
Average apparent cost per place[1]	2 500	2 700
Estimated cost per new place	2 000	2 100
Ministry of Education schools		
Average apparent cost per place [1]	2 200	4 900
Estimated cost per new place	2 100	3 000
Municipality schools		
Average apparent cost per place[1]	7 800	9 800
Estimated cost per new place	2 000	2 500

1. Including replacement.

Even though the figures are only very roughly estimated from the scarce data available, two things become immediately apparent. Firstly, there is a very wide variation in replacement activities from year to year and, secondly, although there is a very big difference between the replacement activities of different organizations, there is a much smaller difference in the average capital cost per new place. Taking account of the longer time series available for new local government schools, it seems (even discounting the 1963 figures which seem to be impossibly low) that there has been a very rapid increase in the capital cost per place, which is difficult to explain in terms of different school designs, different construction standards or rising construction costs. It can be fully explained only by an increase in the proportion of the total cost of new schools financed by the central and local governments and a fall in the proportion financed by parents and local communities. If there is to be a rapid expansion of first-level education it is absolutely essential that this trend be reversed.

Finally, it should be mentioned that supervision and administration activities are entirely inadequate at present (with an average expenditure of only about 6 baht per pupil, or about 1 per cent of the total recurrent unit costs). If there is to be an effective control of quality in all types of first-level school, it is essential that supervisory activities, and thus expenditures, be increased dramatically.

SECOND-LEVEL EDUCATION—ACADEMIC AND COMPREHENSIVE

There are now in Thailand three distinct types of government academic or comprehensive second-level schools, and also private second-level schools. At the beginning of the second five-year plan a project for converting twenty ordinary second-level schools into fully comprehensive schools was started with Canadian government assistance. Despite the educational success of this project and the

high level of interest shown by Thai educators in the new diversified curriculum with all the options available, it was found to be impossible to convert more schools because of the high capital and recurrent costs involved. The Thai government therefore developed its own system of comprehensive education (known as type II comprehensive) which, although maintaining a diversified curriculum, offered fewer options and thus reduced the capital investment and recurrent costs.

In the following paragraphs we will, for simplicity, consider the public second-level school system as a homogeneous system, only drawing attention in passing to the main differences between the cost in each of the three types of schools. Table 14 summarizes the available data on recurrent unit costs in second-level education. Again we draw our data from two sources, a macro-analysis and a random sample study of school accounts.

TABLE 14. Movement and range of public second-level school unit cost, 1966-70

	Cost per pupil				
	Teacher's salary	Allowances	Non-teacher cost	Admin. cost	Total
1966	923	40	83	83	1 129
1967	980	40	109	85	1 214
1968	1 019	38	167	86	1 310
1969	936	36	164	75	1 211
1970 average	880	31	174	77	1 162
1970 low	520		39	77 (av)	636
1970 high	1 105		414	77 (av)	1 596

During the early part of the period when the Type I comprehensive schools were being established (their non-teacher costs at that time were about fifteen times the average level in ordinary academic schools, and the teacher costs at least 50 per cent higher), the over-all average unit costs began to rise dramatically. With the large expansion of enrolments in 1969 (most of this expansion taking up excess capacity in existing schools), recurrent unit costs again began to fall, with the exception of the non-teacher costs where a concerted effort was being made to diversify the curriculum and to increase the quantity of teaching materials and equipment available. It is expected that during the third-plan period unit costs in second-level education will not change greatly as there will be two conflicting tendencies; a gradual rise in non-teacher costs and a moderate fall in average teacher salaries per pupil.

Like the first level, second-level education's macro-average costs tend to hide what is really going on, for again we have a wide range of costs in different schools, with teacher costs in the most expensive school in our sample being more than twice those in the least expensive school, and non-teacher costs varying tenfold. Admittedly the most expensive school is a type I comprehensive school and the least expensive an academic second-level school, but even among academic

schools it is possible to find almost a fourfold difference in non-teacher costs and a 1.8-fold difference in teacher costs.

Whereas with first-level schools it was impossible to notice any significant correlation between the level of costs and the size of the schools, in academic type I comprehensive and type II comprehensive schools there is a significant correlation. *The larger the school, the higher the recurrent unit costs.* This does not reflect inherent diseconomies of scale, but merely the greater bargaining ability of the larger schools. Again it seems obvious that, through the imposition of centrally established costing norms, not only could very large savings be realized, but there would be a much more homogeneous educational system with greater equality of educational opportunity.

As far as capital costs are concerned, although standard plans exist for the construction of new four-stream type II comprehensive MS1-3 schools, involving a capital cost per place of about 7,600 baht, they are rarely adhered to and, of two new schools recently completed, one involved a capital cost per place of around 9,000 baht and the other about 13,000 baht. Unfortunately we have no reliable micro-data that show the difference in construction costs between different sizes. Nevertheless, it does seem that a type II comprehensive school involves a unit capital expenditure about 1.5 times that of an ordinary academic school, while a type I comprehensive school has a unit capital cost about twice that of a type II school. As there is no careful planning of physical facilities, the above figures are only very rough indicators of the orders of magnitude. (Schools normally negotiate for as much money as they can get and then build as many standard classroom blocks as this money will allow, without even deciding what the building will be used for.)

In addition, there has not yet been any detailed study of the existing facilities available at second-level schools or of their utilization. As a large proportion of increased enrolments will go into new schools it is very difficult to make any reliable estimate of what the future capital requirements of second-level education will be. Even a study of past capital unit expenditures does not produce very useful results (in baht):

	1966	1967	1968	1969	1966-69
Capital cost per place, public second-level schools	9 540	6 730	2 280	4 100	4 210

It is absolutely essential, if the greatest possible use of scarce resources is to be made by second-level schools, that a detailed study of the present utilization of facilities be carried out, standard space utilization norms calculated and standard plans drawn up and enforced. The situation where some second-level schools (requiring specialist facilities and teachers) have lower recurrent and capital unit costs than first-level schools run by the same ministry, while other schools have unit costs several times higher, cannot be allowed to continue in a period when government financial resources are becoming annually more scarce.

As far as private schools are concerned, we have very little data on the level of recurrent costs and none on capital expenditures. From the information that we do have, it seems that the recurrent unit costs average between 400 baht and 500

baht, considerably less than half the average level in government schools. The system of subsidies is the same as that described for first-level schools, but a smaller proportion of second-level schools qualify because of the difficulty in meeting the 300 baht qualification requirements. It is significant that private schools have only a slightly smaller proportion of pupils passing the MS3 exam. than government schools, but a much lower pass rate for the MS5 examination. In other words it seems that, for a general curriculum, a high cost level is not essential, but as soon as the curriculum becomes more specialized, good quality teachers and well equipped schools are necessary.

VOCATIONAL AND TECHNICAL SCHOOLS

Vocational second-level education is considerably more expensive than either academic or comprehensive second-level education, and technical education still more expensive. It proved exceedingly difficult to work out even macro-estimates of the unit costs of public vocational and technical schools, for very often both technical and vocational courses (and perhaps also technical teacher training, or short courses) would be held in the same school and there was no easy way of attributing the total costs, or part of the cost of many schools, to a particular level of education.

Table 15 summarizes what information we were able to calculate, both from a macro-analysis and from the random survey (which, with so many different types of schools at this level, often included only one or two of any type).

TABLE 15. Recurrent unit costs borne by the government in various types of public vocational and technical education, 1970 (in baht)

	Teacher and remuneration cost	Non-teacher cost	Central cost	Total
Vocational + voc. F.T.				
Average	1 761	1 121	89	2 971
Low	1 060	320	89 (av)	1 469
High	...	...	...	...
Technical average	3 252	1 528	89	4 869
Prachomklao Tech. Inst.				
North Bangkok	2 299	2 737	89	5 125
Telecommunications Inst.	2 652	721	89	3 462
Thonburi Tech. Inst.	2 651	1 316	89	4 056
Short courses	...	....	...	700

The figures were the most accurate obtainable and seemed to be the most reliable. The advantage of some other figures obtained by different calculations over the ones that we have used is that they provide some time-series data; for example, it appears that vocational school recurrent unit costs increased at

around 14 per cent per annum between 1967 and 1969, and then fell by more than 6 per cent in 1970; at the technical level recurrent unit costs increased 4 per cent in 1968, fell 1 per cent in 1969, and fell again by more than 9 per cent in 1970.

Table 15 shows that recurrent unit costs for vocational second-level schools are very much higher than those shown in Table 14. The average teacher cost per pupil is double that in ordinary second-level schools, and the non-teacher cost more than six times greater. Even the least expensive vocational school in our sample has a recurrent unit cost higher than that of the most expensive type I comprehensive school in our sample.

Although it would be expected that the costs of full-time vocational education would be higher than those of academic second-level education, such a wide difference in unit costs, particularly for teachers' salaries, does not seem justified.[1] If full-time vocational education is to play a useful role in the production of skilled workers, it is absolutely essential that costs be dramatically reduced, otherwise it will prove more efficient to train them through informal day-release, block-release or on-the-job schemes.

The recurrent cost per pupil in technical schools and colleges would not seem too high if these institutions concentrated on the training of technicians (as do two of the branches of Prachomklao Technical Institute, the Telecommunications Institute and Thonburi Technical Institute). However, it seems that those schools which train both artisans and technicians have higher unit costs than those training only technicians. There is very little justification for the average teacher cost per pupil in technical schools (also training artisans) which is almost four times the average level in ordinary second-level schools. Nor does there seem to be much justification for the fact that the non-teacher costs per pupil for ordinary technical schools are higher by more than a factor of two compared with those at the Telecommunications Institute which concentrates on the training of high-level electronics technicians; nor that the non-teacher costs per pupil at North Bangkok Technical Institute (which offers second-level vocational courses, as well as technical courses) are more than double those at Thonburi Technical Institute (a college which concentrates only on high-level training), particularly as both are branches of the same institution.

Technical and vocational education leave the same impression as other levels of education: *recurrent budgets do not seem to be allocated on the basis of any easily identified logical criteria, but more on the basis of past allocations.* In other words it seems that once an institution manages to get a high budget it is likely to be well off for several years, for institutional budgets rarely seem to be reduced in Thailand.

Finally, it should be mentioned that, although technical schools have high unit recurrent costs, many such schools are offering programmes which do not

1. It should be noted that in a recent study by Mark Blaug ('The rate of return to investment in education in Thailand') the social rate of return was shown to be considerably lower from vocational second-level schools, than from academic schools.

entirely meet the needs of industry, for they have insufficient modern equipment and large numbers of relatively unqualified teachers. Proper costing procedures, involving the use of standards and norms, will not necessarily permit a reduction in unit costs but would certainly allow an improvement in the instructional programmes without any large increase in recurrent unit costs. In other words it will encourage a much better utilization of the scarce resources used in producing the high- and middle-level technical manpower needed to staff the planned industrial development.

As has been mentioned earlier, there are hardly any reliable data on private vocational second-level schools. Blaug,[1] while carrying out his cost/benefit research project, did survey some private vocational schools in the Bangkok/Thonburi area and found an average recurrent cost per pupil of 1,893 baht, but it is likely that schools in the capital city are better staffed and equipped than those in the rest of the country and, in addition, he does not explain exactly how he arrived at this figure, i.e. how he solved the problem of the multiplicity of different types and lengths of courses offered. (For example, fees in schools offering the Ministry of Education vocational curriculum are sometimes as high as 4,000 baht per annum, while for other courses in private vocational schools they can be as low as 500 baht per annum.) Nevertheless, Blaug's figure of 1,893 baht per year can be taken as indicative and, if this is the case, it would seem that the recurrent unit costs in private vocational schools are only about two-thirds of the level in government schools. For once it seems that the level of private recurrent unit costs is more acceptable than that in government schools.

As far as the capital costs of vocational and technical education are concerned, any figure that we might quote will not be very useful. With vocational second-level, technical and vocational teacher-training courses in such subjects as agriculture, commerce, handicrafts, industrial trades and engineering, almost every school or college will have its own cost pattern. Blaug, in his study, found that the capital cost per place in government vocational schools was 11,475 baht and in private vocational schools 4,768 baht. According to the figures calculated for this study the capital cost per place in recent developments of vocational second-level education was considerably higher than that found by Blaug. Although we place little faith in macro-calculation of capital costs in vocational and technical schools (the Vocational Department in the Ministry of Education has no standard plans), for our future cost projections we could obtain an idea of the likely level of capital cost per place only by this method. Over the past few years the cost per place was calculated as follows: vocational schools 1967—37,782 baht, 1968—40,730 baht, 1969—16,026 baht, and 1970—12,431 baht; and technical schools 41,280, 11,151, 7,497 and 11,210 baht each year respectively.

Because of a large World Bank (IBRD) supported project for upgrading vocational schools, the apparent vocational unit cost is rather on the high side and, on the basis of a construction cost study for new places in vocational and technical schools, the following figures were assumed as the basis for a future cost projec-

1. Mark Blaug, op. cit.

tion: vocational schools, an average desirable cost per place of 20,000 baht in 1971; and for technical schools, 25,000 baht per place.

TEACHER COLLEGES AND COLLEGE OF EDUCATION

There are three major levels of teacher qualification and a larger number of sub-programmes are used for the purpose of costing, but outside universities teacher education is divided into only two levels: teacher colleges (where all lower certificate and most higher certificate or diploma teachers are trained) and the College of Education (where some higher certificate as well as degree and post-graduate teachers are trained). For the teacher colleges we have macro-information and the results from a random sample; for the College of Education we only have the results of the macro-calculations for there is only one of them (even though it has seven branches). Table 16 shows the level of recurrent unit costs in teacher colleges and the College of Education.

TABLE 16. Unit recurrent costs borne by the government for the College of Education and teacher colleges, 1967-70 (in baht)

	Cost per pupil borne by government					
	Year	Teacher salary	Allowances	Other[1]	Central cost	Total
College of Education	1967	5 899	116	1 384	178	7 577
	1968	4 984	111	1 223	195	6 513
	1969	4 161	101	1 251	166	5 679
	1970	3 851	134	1 423	137	5 545
Teacher colleges	1967	1 863	66	453	178	2 560
	1968	1 890	66	464	195	2 615
	1969	1 736	60	334	166	2 396
Average	1970	1 659	61	440	137	2 297
High	1970	1 679	2 154	—	137 Av.	...
Low	1970	1 127	1 430	—	137 Av.	...

1. Total non-teacher unit recurrent cost, not just that part borne by government.

Our analysis of teacher colleges' accounts failed to separate the recurrent non-teacher costs into those supported by the government and those from other sources. The range of recurrent unit expenditures is lower at teacher colleges than in other parts of the system (i.e. the highest teacher and non-teacher recurrent costs were only about 50 per cent higher than the lowest). A range of this order of magnitude is still difficult either to explain or justify, but it is much less than in other parts of the educational system.

Teacher costs per student in both the College of Education and the teacher colleges have been falling over the period 1967-70. The level still seems rather

high, with the teacher cost per pupil in the teacher colleges being twice the level in government second-level schools. The unit costs in the College of Education are twice as high again. It is also difficult to explain exactly why the non-teacher unit costs borne by the government in the College of Education are more than three times the level of those in the teacher colleges.

In addition to the full-time courses, both the College of Education and teacher colleges run 'twilight' evening courses with enrolments almost as large as the full-time enrolments. Fees are charged which are high enough to cover all but the overhead capital costs. The 'twilight' students pay up to about 1,000 baht per annum fees (depending on how many subjects they take) and this revenue is used mainly to pay the extra salaries for the evening tuition. In fact many of the staff of the schools and colleges earn almost as much from a few hours' evening part-time teaching as they do from their ordinary full-time work. Thus the teacher-training department does not find it difficult to recruit staff, as their earnings are very much higher than those of teachers in any other level of education.

Over recent years the capital cost per place has been increasing due to the growing emphasis that has been placed on teacher training in an effort to eliminate many of the worst areas of teacher shortage in the country. The average cost per place over the period 1967 to 1969 worked out at 15,900 baht for the College of Education and 12,700 baht for the teacher colleges. These figures, however, are very much lower than those involved in the standard plans for new colleges, according to which the cost per place in the College of Education should be about 40,000 baht and that in the teacher colleges 25,000 baht. These standard plans include housing in large quantities for both teachers and students and could be reduced in the case of severe financial scarcities. Nevertheless, they have been used as the basis for future cost projections. Trained teachers are likely to work very much on their own after graduation and it is important to use the total environment in their education, so that it will leave a permanent impact.

THIRD-LEVEL EDUCATION

There are only two sources of data on recurrent unit costs per pupil, both based on a study of university accounts. The first was carried out by Blaug for the 1968/69 academic year, and the second was carried out for this study, approximately for the 1967/68 and 1968/69 academic years and in detail for the 1969/70 academic year. In our calculations we separated the central and administrative expenditure from the costs which could be attributed to particular faculties; it appears that Blaug omitted to take account of these central costs. There are some differences between the two calculations, but these can be explained quite easily. Either different items have been included (for example we included the costs of the teaching hospitals as a charge to the Faculty of Medicine), or, because there were no reliable data on FTSE (full-time student equivalents) in the different faculties, various estimates (particularly with science, engineering and medical students) had to be made.

From Table 17 it can seen that Blaug's and our calculations express similar

TABLE 17. Recurrent unit costs in universities by field of study, 1968/69 and 1969/70 academic years (in baht)

	1969/70 calculation			Blaug average[3]
	Average	High	Low	
Central costs	1 532	20 427	316	Not calculated
Humanities	6 368	9 785	3 608	6 349
Education	5 151	5 304	3 754	4 745
Fine arts	5 596	5 913	5 281	4 926
Social science and law	1 438	3 523	721	1 586
Natural science	9 889	24 697	5 827	10 197
Engineering	13 070[1]	105 806[1]	4 944[1]	6 620
Medical science	21 307[2]	40 538[2]	17 773[2]	14 717
Agriculture	7 380	30 623	5 762	6 971

1. Calculated on a FTSE basis, taking account of the fact that a considerable portion of Faculty of Engineering teaching is done in the Faculty of Science.
2. Including the costs of the teaching hospitals.
3. Mark Blaug, op. cit.

orders of magnitude, except in the cases of medicine and engineering, where the reasons for the differences are explained.

What must surprise the reader is the unusually wide range in recurrent costs for the same item or faculty in different universities. The range runs from more than a sixty-fold difference in central unit costs, through a twenty-five-fold difference in engineering unit costs, to a five-fold difference in agriculture and social science, and large ranges in all other subjects except fine arts (where there are only two faculties). Although these differences can be described (different pupil/teacher ratios, different average salaries per teacher, different non-teacher recurrent unit costs, etc.) they are hard to justify. At the third level one does not expect the range in unit costs between universities to be greater than the range between average university and average first-level recurrent costs. Certain costing norms do exist for the universities (for example pupil/teacher ratios) and if these norms were applied there would, theoretically, be no need to increase total recurrent budget allocations for third-level education until after 1976. Obviously such drastic action is not possible. Therefore, in our costing for the 1970s we have assumed that, although all universities will receive some increase in recurrent budgets, the range in unit costs will be very much reduced by the end of the decade.

As far as capital costs are concerned there are only the rough macro-calculations made for this study to base any future capital cost projections on, for Blaug made only an estimate of the total value of buildings (excluding equipment) at the different universities. (He did not attempt to calculate the capital costs by different fields of study.) However, our incremental capital cost per place (Table 18), even though the calculation was averaged over a three-year period, cannot be considered very accurate due to the unevenness of university investments.

TABLE 18. Capital expenditures per place at universities met by the government, 1967-69 average (in baht)

	Average (1968-69)	High (1968)	Low (1968)
Central costs	25 040	67 410	1 200
Humanities	14 390	42 992	3 815
Education	60 731[1]	...	...
Fine arts	183 973[1]	...	...
Social science	15 087	24 200	21
Natural science	38 435	35 329	21 632
Engineering	57 117	178 800	20 259
Medical science	101 163	504 286	52 006
Agriculture	31 867	52 513	9 375

1. Data on one university available.

The range of capital unit costs is as wide as, if not wider than, recurrent unit costs, so no clear conclusions can be drawn. There is no comprehensive study of university space utilization as yet, so it is not known whether the high capital unit costs are a reflection of extravagance or of the inadequacy of past investments. Thus the cost projections for the third plan were based not on any macro-unit cost figures, but on a detailed analysis of all the universities' projects. Only for the longer-term projections have we had to use the macro-figures.

CONCLUSIONS

In all the above discussions of unit costs attention has been devoted to the direct costs (either met by the government or the total direct costs) of running the various levels and types of education. We have not included the expenditures by families on books, uniforms, extra coaching and other items of expenditure directly connected with the education of their children, but not being paid in the form of fees. This omission is not because we consider the amounts spent to be unimportant, but because neither of the two available sources supplied data that can be readily used. Both sources are based on surveys in the Bangkok/Thonburi municipal area and the results were contradictory.

According to Blaug these family educational expenditures (excluding fees) amount to 300 baht per pupil per annum at the first level, 750 baht per pupil per annum at the second academic and vocational levels, 1,200 baht per pupil per annum at teacher-training institutions and 1,400 baht per pupil at university.

A Unesco Regional Advisory Team for Educational Planning in Asia[1] found that only 0.7 per cent of family income in the Bangkok/Thonburi area was spent

1. *Long-term projection for education in Thailand*, Bangkok, Unesco Regional Office for Education in Asia, 1965.

on these indirect educational items, averaged at about 80 baht per pupil per annum for all levels of education.

It seems to us that the Unesco figure is too low for the Bangkok/Thonburi area, while the Blaug figure, although more feasible, is rather on the high side and is certainly much too high to be applied all over the country, for the vast majority of the population could not bear such levels of indirect expenditure. The same Unesco report suggested that the following levels of expenditure would be the minimum acceptable: 116 baht per pupil per annum in the first level, 283 baht in lower second level and 350 baht in upper second level.

Because of the lack of any conclusive data on this point the question of these indirect expenditures has been ignored during the discussions of the financing of the educational system in Thailand.

It might be useful at this stage to show how the proportion of government current revenues going to teacher salaries and other items differs widely from level to level and even changes considerably over time. Table 19 is adapted from Table 35 in Appendix I.

TABLE 19. Percentage distribution of government educational recurrent expenditures by purpose, 1963 and 1969

	Salaries		Allowances		Materials		Others	
	1963	1969	1963	1969	1963	1969	1963	1969
First level	88.8	88.0	2.8	3.4	1.2	1.5	7.2	7.1
Second level, general	67.9	61.1	3.4	3.5	1.7	1.6	27.0	33.8
Vocational	82.3	66.5	5.1	6.3	3.0	20.0	9.6	7.2
Teacher training	76.3	80.7	6.4	8.5	3.3	4.6	14.0	6.2
Third level	73.4	58.1	4.8	10.2	15.8	18.6	6.0	13.1

It can be seen from the table that in all types of education (except teacher training) the proportion of total current budgets allocated to teachers' salaries has fallen (with the reduction of the proportion in vocational education and third-level education particularly rapid), while the proportion of other expenditures has tended to increase (with a very dramatic increase in the allocation for materials for vocational education). The figure under the 'others' column in second-level general education is high as it includes the subsidies paid to private schools.

Table 19 and much of what has been said before in this section tend to emphasize the need for much more careful planning of expenditures at all levels and in all types of education. It is of the utmost importance that recurrent and capital costing norms are established and enforced for the whole educational system. In our view this measure alone would be sufficient to solve most of the financing problems that might be encountered by individual institutions and by the whole educational system over the next few years.

Present systems of financing education

In this section we will be dealing only with the financing of institutional expenditures (and, of course, the central expenditures of the government attributable to education); we will not be covering the financing of indirect expenditures on books, uniforms, etc., which are almost always met by either the pupil himself or his relatives. This section will begin with a general description of financing procedures and will then give a more detailed quantitative analysis of the sources of finance for each level and type of education.

Virtually all public second- and third-level institutions belong to and are managed directly by various government ministries and organizations. There are a very few second-level schools which are theoretically operated by local authorities. With all government organizations, the school authorities prepare budget requests which are then vetted by the relevant department and again by one or both of the educational planning organizations (the Educational Planning Division in the Ministry of Education and the Planning Unit in the National Educational Council). The proposed budgets are then discussed by the Budget Bureau (in the Prime Minister's Office), the Cabinet and the National Assembly. The approved budget, item by item, line by line, is transmitted back to the relevant government organization and then to the schools. (See Figure 2.) Theoretically the schools have to follow the approved budget closely, but in fact there is some flexibility in the use of the non-teacher recurrent costs. At the end of the school year the schools have to submit their audited accounts, which will eventually be checked by the government auditor. The system is tightly controlled to prevent any misuse of funds and the school administrations have very little direct authority over how they can use the allocated funds. They do, however, have considerable freedom in using their own resources.

At the first level only a very small proportion of schools belong to the central government, with most public schools being administered either by the local authorities or the municipalities. The central government provides a subsidy to both local administrations. For the local authority schools this is sufficient to meet the costs of all teachers' salaries (paid directly to the teachers by the local education officer) and also the cost of a minimum amount of textbooks, other teaching materials and allied expenditures. In addition, the subsidy is meant to be sufficient to pay 75 per cent of the costs of capital expenditures. The local education officer is responsible for allocating and administering the subsidies at his disposal under the over-all control of the local administration and the governor. In municipal schools the subsidy is paid directly to the municipalities and, except insofar as they have to achieve certain enrolment targets, they are free to allocate this money between schools and items as they see fit. Over-all, the central government provides municipalities with only about half of their educational finance.

In general, it can be said that there is very tight control of government expenditures at all levels of education, with very little freedom left to the institutions to decide how they will use the government money available. However, in the

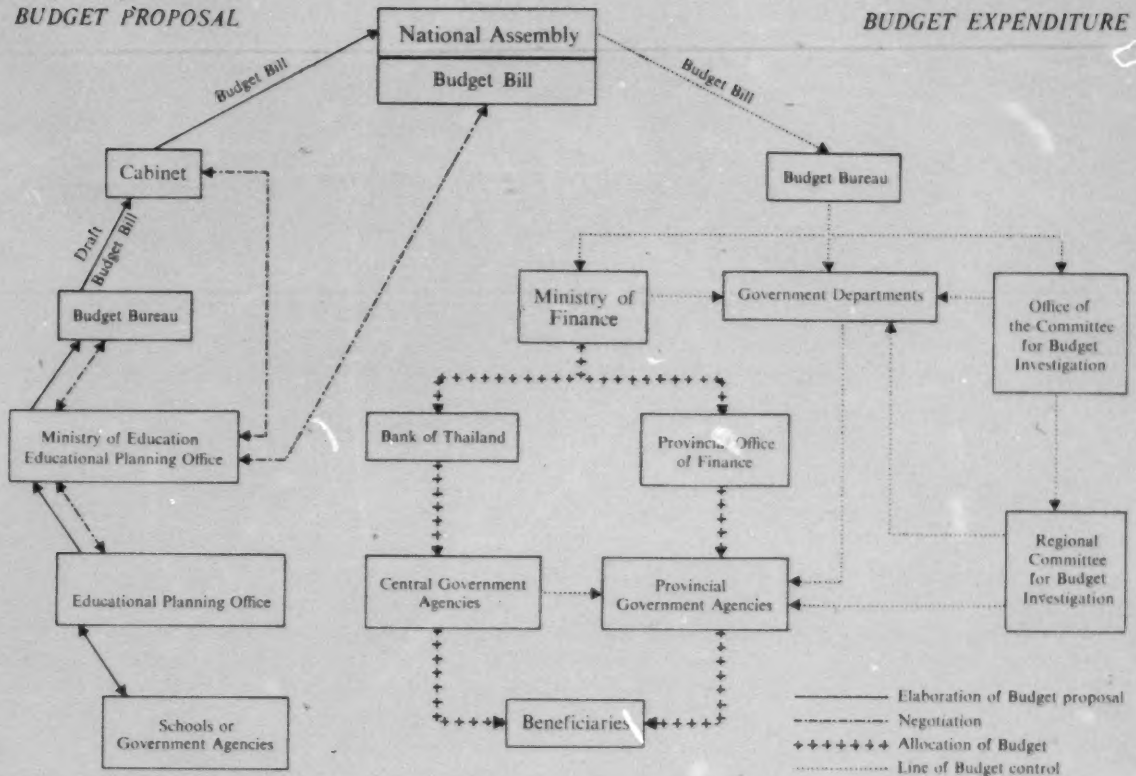

FIGURE 2. *The budgeting process.*

budgeting process the institutions' own desires carry very great weight, as, generally speaking, few scientific methods of budget allocation are used. Basically, each institution will get a certain percentage increase for each recurrent item over the previous fiscal year's allocation. Thus existing inequalities in unit costs are intensified over time.

In the following paragraphs the data used come either from the over-all analysis shown in Table 31 of Appendix I, or from some of the results of our random study of school accounts.

FIRST-LEVEL EDUCATION

Figures 3 and 4 overleaf describe the mechanism of financing, while Table 20 summarizes the over-all financing of public first-level education.

TABLE 20. Percentage distribution of financing of first-level educational expenditures by source

	Subsidies or direct cent. govt.			Donations			Fees			Local authority or municipal resources		
	1969	1970	1971	1969	1970	1971	1969	1970	1971	1969	1970	1971
Ministry of education schools	97.5	97.4	97.7	0.4	0.5	0.2	2.1	2.1	2.1	—	—	—
Local authority schools	97.3	97.1	97.6	0.9	1.1	0.7	0.5	0.7	0.6	1.3	1.1	1.1
Municipal schools	48.4	54.4	59.0	—	—	—	—	—	—	51.6	45.6	41.0
TOTAL	93.5	94.0	94.7	0.8	1.0	0.6	0.6	0.7	0.7	5.1	4.3	4.0

The results from our random sample survey of school accounts support the conclusions of this analysis. It appeared that the central government supported between 100 and 94.5 per cent of the expenditures of local government and Ministry of Education schools, with up to 4.9 per cent coming from donations and up to 5.5 per cent coming from fees. Unfortunately there were no municipal schools in the sample.

The local authorities in fact devote a very small proportion of their own resources to education, although the range is very high, varying from nil to an exceptional 94.8 per cent (normally not higher than 50 per cent) and averaging 11.6 per cent in 1969 and 8.7 per cent in 1971. Thus the proportion of local authority resources going to education seems to be decreasing.

Between 1965 and 1969 the municipalities increased the proportion of the total educational expenditures financed from their own resources from 35.4 per cent to 51.6 per cent. During this period, however, municipal enrolments, parti-

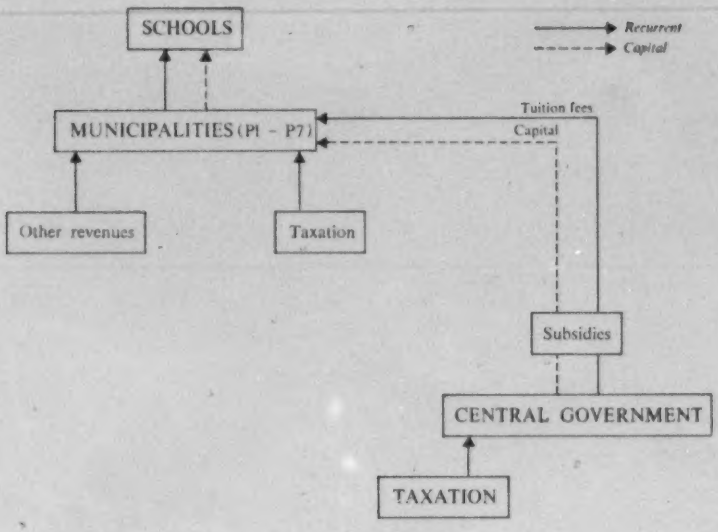

FIGURE 3. *Financing of education under municipalities.*

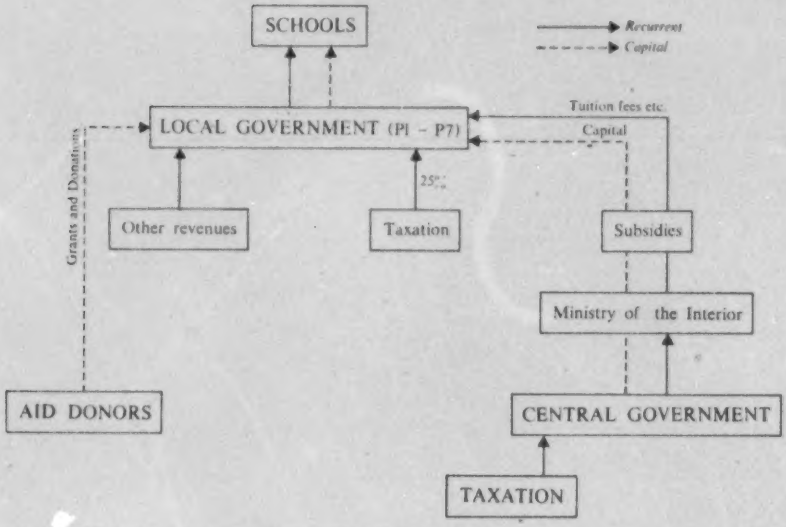

FIGURE 4. *Financing of education under local government.*

cularly at the lower first level, grew more slowly than the national school-age population, and thus the government decided to step up the amounts of their subsidy. In 1965, only 5.3 per cent of the municipalities' own resources were being used for education, but by 1967 this proportion had already grown to 12.1 per cent and by 1970 had grown further to 12.4 per cent.

It should be emphasized that the present system of allocating subsidies to municipalities does not encourage them to mobilise their own resources. No obvious criteria for the allocation of these subsidies can be discovered. In 1969, although the average subsidy was 236 baht per pupil, the range varied from 148 baht to 637 baht per pupil. The higher subsidies were correlated neither with the wealth of the municipality nor with the enrolment ratios. It is important that a new system of educational subsidies be worked out so that the poorer municipalities with the lowest enrolment ratios receive the largest subsidies per pupil, whilst the richer localities are encouraged to support an increasing proportion of their educational expenditures from their own resources.

One of the main reasons for the transfer of the responsibility for first-level education from the Ministry of Education to the local authorities under the Ministry of Interior in 1967 was that it was felt that if local authorities were responsible for their schools they would gradually take on an increasing part of the burden of financing them. This hope has not materialized, as the proportion of total educational expenditures financed from local government resources has fallen in recent years and is now almost insignificant. There is certainly scope for the local governments to finance a considerably greater proportion of educational expenditure than they do at the moment. It does not even appear that the local authorities are financing the 25 per cent of capital expenditures that they are supposed to.

It should be mentioned here that donations are probably considerably higher at the first level than those shown in Table 20, as a large proportion of them are likely to be given in kind and do not appear anywhere in the school accounts.

Because lower first-level education is universal and compulsory, no fees can be charged. At the upper first level, where places are still very limited, a symbolic fee of 40 baht is charged by most schools. In the short run it might be possible to increase this fee but, in the long run, as Thailand gets nearer and nearer universal upper-cycle first-level education, this fee too will have to be abolished.

SECOND-LEVEL EDUCATION (see Figure 5)

Table 21 summarizes the over-all financing of public second-level education. It can be seen from Table 21 that there are only two significant revenue sources for second-level education: direct government subventions; and fees. Table 22 summarizes the fees generally charged (institutions do have a limited amount of freedom in fixing fees).

The wide variation in the proportion of revenue financed from fees might at first sight appear unusual, particularly as the level of fees in each type of education is similar. The explanation is that the amounts used in Table 21 are drawn from

TABLE 21. Financing of public second-level education; percentage distribution by source, 1969, 1970 and 1971

	Govt. financed			Donations			Fees		
	1969	1970	1971	1969	1970	1971	1969	1970	1971
Second-level general	89.4	90.8	89.3	1.0	0.9	2.0	9.6	8.3	8.7
Teacher training (including College of Education)	78.0	75.7	73.9	0.1	0.1	0.1	21.9	24.2	26.0
Vocational and technical	98.0	97.8	97.3	—	—	0.2	2.0	2.2	2.5
Fine arts	99.1	99.2	99.0	—	—	—	0.9	0.8	1.0
Physical education	97.4	98.3	98.0	0.2	0.3	0.3	2.4	1.5	1.7
Total	91.0	89.3	87.6	0.4	0.4	0.9	8.6	10.3	11.5

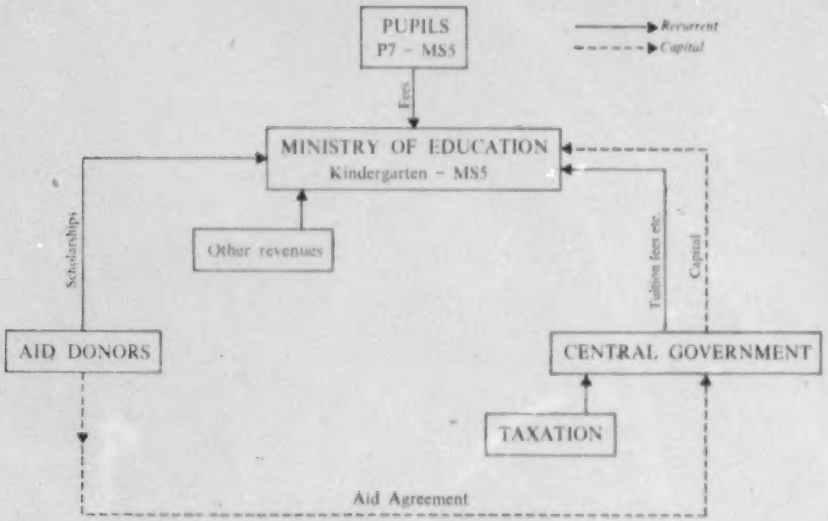

FIGURE 5. *Financing of education under Ministry of Education.*

the Ministry of Education's central accounts, where different departments deal with school fees in different ways. The Vocational Department allows schools to keep the first 80,000 baht they receive in fees without showing this in their accounts. They are allowed to use this money at their own discretion. Some schools keep more than this 80,000 baht without reporting it. In fact, if we include these unreported fees, between 3.5 per cent and 4 per cent of vocational educational expenditure is met through fees.

The proportion of total revenues in the Teacher-training Department financed through fees is particularly high because a considerable proportion of students

TABLE 22. Fees of public second-level education (baht per year)

	Academic and related fees	Dormitory fee
MS1-3 academic	160	—[1]
MS1-3 vocational	100	—[1]
MS4-5 academic	200	—[1]
MS4-6 vocational	150-200	—[1]
Technical	250-500	—[1]
Teacher training, lower certificate	160	1 500
Teacher training, higher certificate	200	1 500
Teacher training, College of Education	350-460	1 500
Physical education	400	—[1]

1. Institutes of this level and type are not usually residential.

are boarders and pay a high residential fee. In addition, from 1970 the fees paid by the 'twilight' students (25 baht per subject, up to about 1,000 baht per pupil per year) have been included.

Thus the proportion of education financed through fees of one kind or another does not seem to be comparable from one type of education to another, particularly when one studies the central accounts of the Ministry of Education.

Our sample study of school accounts shows a quite surprising range both in the proportion of total expenditure financed from fees and in the actual average amount paid per pupil. In public second-level education, between 1.6 per cent and 21.8 per cent of total revenue comes from fees, while in vocational education it is between 3.3 per cent and 36.6 per cent (the unit fee varying from 100 baht to 1,660 baht per annum). In teacher training the range is less, between 28.1 and 41.7 per cent of total revenues. The range in average unit fees in teacher training and in vocational education is explained mainly by the differing proportion of students who are boarders.

With relatively fixed and constant fees, the poorer schools are financing a greater proportion of their expenditures than the richer schools. It might perhaps be more effective if each second-level institution had to finance a certain proportion of its total recurrent expenditures from the school fees, or a floating fee scale might be set up. For example, poor schools might need to charge fees to cover only say 20 per cent of their recurrent expenditures, while the richer schools might have to cover 40 per cent of theirs. If such a scheme were introduced there would at least be some indication from parents as to whether they feel the more expensive school is sufficiently attractive to warrant paying much higher fees. (Of course there would have to be some system of loans or scholarships to ensure that poor pupils have a chance to go to the better schools.) In addition, with the popular demand for education increasing at a very rapid rate, one of the few ways which will enable the government to control and to satisfy a large proportion

of the demand at one and the same time, is to increase the fees, particularly in the more expensive second- and third-level institutions.

THIRD-LEVEL EDUCATION (see Figure 6)

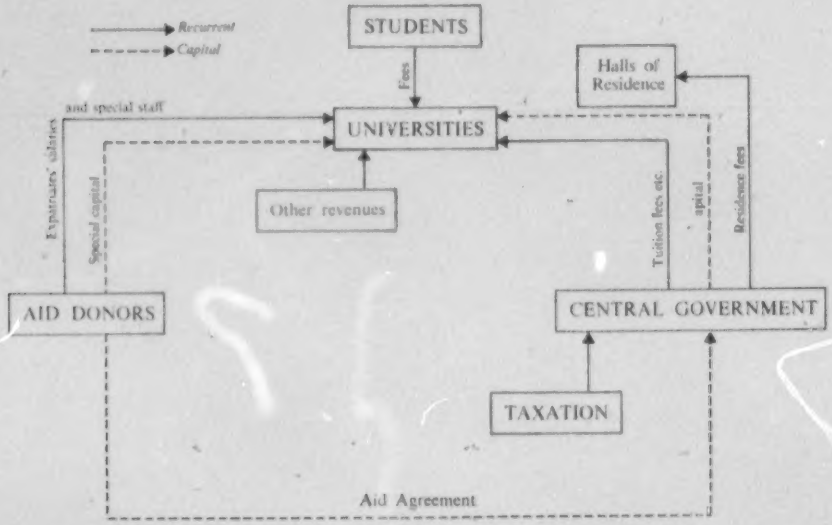

FIGURE 6. *Financing of universities.*

In 1970 the nine conventional universities had 94.5 per cent of their total revenue financed through grants from the central government, 3.9 per cent from fees, 1.4 per cent from their own resources and only 0.2 per cent from donations. The level of fees in universities is very low compared with recurrent unit costs, varying from about 500 to 1,000 baht per student per annum, with additional fees charged for residence. However, for medical and engineering students, an extra fee of 10,000 baht and 5,000 baht per annum is charged respectively, with only a very few government grants available to help poor students. Thus it seems that these two crucial professions will be restricted largely to children of the rich.

It should in fact be possible to increase the general fees charged at university, at the same time providing loans for the poorer students so that they are not excluded from third-level education. In the short run this is unlikely to affect the revenue as the increased fees will be offset by the loan that will have to be given to poor students. However, in the long run, when loan repayments start coming in, revenue will be increased. By a policy of exemptions graduating students could be encouraged into occupations or areas of the country where they are most needed, i.e. those willing to take the most crucial (but often the least pleasant) jobs could be let off part of their loan repayments. This system would not only

increase the revenue available for education in the long run, but would also reduce income differentials and encourage a more optimum utilization of scarce high-level manpower resources.

The new open university at Ramkamhaeng is designed to allow some third-level education to those who failed to get into one of the conventional universities. The fees charged are supposed to be sufficient to meet the recurrent costs of operating the university and, even though the quality of instruction is not very good (with pupil/staff ratios over 100:1), they tend to be higher than those charged in ordinary universities. For example the Ramkamhaeng student has to pay an enrolment fee of about 400 baht per annum and 30 baht for each subject-semester. As most, if not all, the students at Ramkamhaeng are in full-time employment and are studying part-time, and as the drop-out rate is very high (50 per cent dropping out during the first year), it is not significant to talk about the average fee paid per student.

During its first year of operation (in 1971) 37.1 per cent of the university's total revenue came from fees (compared with 3.9 per cent for ordinary universities), 60 per cent from the central government (mainly for capital expenditure) and the remaining 2.8 per cent from donations. There will obviously be pressure on the government to step up the level of its support to Ramkamhaeng. It is expected that these pressures will be resisted as Ramkamhaeng is producing not the manpower that the nation needs, but rather the education that individuals want. If they want this education badly enough, they should be willing to pay for it. As most of the students are working they should be able to pay for it.

NON-FORMAL AND OTHER EDUCATIONAL ACTIVITIES

Apart from the various organizations which offer adult and non-formal educational programmes, there are two other organizations within the Ministry of Education which, although not operating schools, play a significant indirect rôle in improving the quality of education throughout the Thai educational system. These two organizations, the Under-Secretary's Office and the Department of Educational Techniques, are almost completely financed from the government budget. With central organizations such as these there seems to be little potential for raising non-governmental money.

The teachers' association (*Kurusapa*) does, however, manage to raise considerable amounts of money, which it then uses to improve teachers' welfare throughout the country. This association receives virtually no money from the government, but depends on membership fees and profit from its textbook production activities (about 70 per cent of general education textbooks are produced by the Teacher Association Press). The revenue it has at its disposal is used for a wide variety of different activities, from subsidized travel for teachers to medical attention and other welfare activities.

Of all the non-formal education schemes run by the government, it is only in those run by the Adult Education Division that significant fees are charged (varying from 240 baht per annum to 480 baht per annum). About 15 per cent

of its total expenditures (including library and other activities not directly involving students) are met from fee revenue. On the other hand the Mobile Trade Training Units illustrate the usual financing situation in non-formal education, for only about 0.5 per cent of their total expenditures comes from fees.

PRIVATE EDUCATION

We have very little information about the real sources of private schools' revenue. All we know with any degree of certainly is the total amount of subsidy paid by the government. We can, of course, also estimate the fee income received by private schools as long as we assume that they report honestly the actual fee. As there are legal maximum fees and as the government subsidies are inversely related to the fees charged, there is a real incentive for private schools to understate their fees. Nevertheless, if we assume accurate reporting of fees, it would appear that the government is financing an increasing proportion of private educational expenditures; their share of the total has risen from 11.0 per cent in 1969 to 11.5 per cent in 1971.

OVER-ALL CONCLUSION

Taking account of central government and direct institutional expenditures for formal and organized non-formal education, it seems that the government financed 78.6 per cent of these total expenditures in 1969, and 79.6 per cent in 1970. In 1969, 0.5 per cent of the revenue came from donations, 2.4 per cent from local government and municipal resources and the remaining 18.5 per cent from fees. In 1970 the comparable figures were 0.6 per cent, 2.2 per cent and 17.6 per cent respectively.

One imaginative scheme for the central financing of educational expenditures that existed in Thailand from 1953 to 1962 deserves mention. A special tax was levied on all contract stamps used. In other words, part of the price of stamps for contracts and receipts was to be used for educational (and also health) development purposes. An ordinary contract would require, say, a 1 baht stamp. Half of this money would go to the Ministry of Finance and the other half would be used specifically for educational (and health) development. In this way, educated (and thus literate) people paid back some of the costs of their education each time they made a contract or obtained a receipt. Theoretically, at least, it seemed a very progressive form of taxation which also had the advantage of taxing the beneficiaries of the system for which the tax would be used.

Before the Second World War there was a special head tax for education which has also been discontinued. Thus now all government educational revenues come from ordinary general taxation sources. There is no longer any specific educational tax, although parents might be more willing to pay a tax if they knew it was going to be used for the education of their children.

One item of revenue has not been included in the above calculation, nor in Table 31 in Appendix I, and this is the money received from local and foreign

TABLE 23. Grants for education, 1967-71 (US $)

Source	1967	1968	1969	1970	1971	1967-71
USAID	2 303 116	2 566 300	3 029 438	3 611 109	1 650 875	13 160 538
UN	1 103 469	814 105	714 737	970 845	731 450	4 334 606
Colombo Plan	1 369 571	1 438 520	1 134 752	1 141 135	774 069[1]	5 858 047
Third countries	1 895 904	1 755 960	1 184 108	2 306 653	2 090 639[1]	9 233 264
Volunteer	731 333	912 000	1 050 244	1 440 749	690 754[1]	4 825 080
TOTAL	7 403 393	7 486 585	7 113 279	9 470 491	5 937 787	37 411 535
Total baht	153 990 574	155 720 968	147 956 203	196 986 212	123 505 969	778 159 928

1. Until September 1971.

TABLE 24. Loans for education, 1967-71

Source	Purpose	$	Baht
Foreign			
IBRD	Improvement of vocational education	6 000 000	124 800 000
Canada	Comprehensive schools project	1 000 000	20 800 000
Local			
Thai National Bank	Improvement of vocational education	8 000 000	166 400 000
Thai National Bank	Comprehensive schools project	7 700 000	160 160 000

loans and foreign grants. This omission is for two main reasons. Firstly, these expenditures are not considered as directly comparable with normal expenditures (a foreign expert might cost $35 000 per annum, while an equally highly qualified and motivated Thai is unlikely to receive more than one-tenth of this amount from the Thai government), and secondly, in many cases, particularly with loan expenditures, it is difficult to attribute a particular amount to a particular year.

However, during the second five-year plan period we do know that over 778 million baht was received as grants, 145 million baht as overseas loans and over 326 million baht from the Bank of Thailand, for various educational purposes (Tables 23 and 24). If an estimate is made of the disbursements in 1969 and to this is added the total revenue shown in Table 31 in Appendix I, we see that almost 3 per cent of total revenue came from grants, 1 per cent from foreign loans, and 2 per cent from local loans, a total of 6 per cent of the revenue in that year. By 1971 it was estimated that these loan and grant revenues had fallen to about 3 per cent of total revenue. During the third five-year plan just under 5 per cent of total revenue is expected to come from these sources. Quite obviously

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not very much reliance can be placed on foreign aid for financing education in Thailand. Not only are the amounts going to remain small, but also the strings that are often attached to such aid make it difficult to use it where it could produce the greatest impact.

In the preceding pages we have attempted to draw rather incomplete data from various sources to show roughly the way in which the Thai educational system is currently financed. From this exercise, however, we can gain very little over-all knowledge of the future possibilities for finance. During the 1960s and early 1970s there has been no real shortage of government resources for education and there has been no real pressure on the educational system to investigate and experiment with new methods of raising non-governmental revenue for education.

The situation is now changing, with real problems of educational finance beginning to arise for which new solutions will have to be proposed. Some of the lessons gained from this past analysis will give us some indication of possible lines of action, but many new schemes and proposals will have to be worked out.

Administrative aspects of the present system of financing

In our view there are two factors above all others that influence the level of unit costs and the sources of finance. Firstly, the willingness or otherwise of the government to give way to pressures from the public for expansion of the educational system and, secondly, various social and hierarchical factors of administration. Let us elucidate briefly.

The expansion of public enrolments was tightly controlled by the government during the 1960s. The share of private education tended to increase at this time, as did recurrent and capital unit costs. Considerable progress was made in improving the quality and effectiveness of public education, for the administrators could use the increased budgets (which were not being used to expand enrolments, as they were in many other countries) to maintain low pupil/teacher ratios and to increase the amount of materials and equipment made available for teachers and pupils alike. However, towards the end of the decade the government decided that it was responsible for increasing the equality of educational opportunity and therefore decided that enrolments should be increased as rapidly as possible at all levels of education. Thus, not only did unit costs begin to fall, but the proportion of total educational expenditures that had to be met by the government rose, because other parastatal and private organizations were conscious of the priority that the government attached to expansion and they were prepared to leave most of that effort to the central government. During these years of rapid expansion the central government did little to encourage other organizations to finance more of the educational expenditures, although it must also be admitted that until the 1972 fiscal year there did not appear to be any serious shortages of government budgets for education. Only now, if the government wants to continue along the path of trying to satisfy, at least partially, the insatiable social demand for education, will it be necessary to mobilize new sources of revenue rapidly, to

work out schemes of reducing unit costs without sacrificing quality, and to work out methods of encouraging the private system to provide a good-quality education for a larger number of pupils.

It is the individual who benefits most from education, and thus he should be made to pay an increasing proportion of the costs of the second- and third-level education that he is fortunate enough to have received. This could be paid either directly or indirectly, in the present or in the future (i.e. in the form of loans), but somehow it should be paid, for there seems little reason why the mass of the population (who have had only about four year's education) should pay for the third-level education of the few, when this education cannot be justified on manpower grounds.

From the point of view of efficiency, there is at present a very great misallocation of resources in education which, if corrected, would allow a rapid increase in enrolments with only a very slight increase in the educational budget. However, the causes of this economic inefficiency are deep-rooted in the Thai civil service, where no one person has a great amount of power. All decisions are made after considerable discussion and comprise between people on different levels of the social and administrative hierarchical ladder. Decisions seem to be taken by balancing the hierarchical weight of the supporters and antagonists of different viewpoints and picking the solution with the least weight against it. Thus, in the educational budgeting and decision-making process, it is absolutely essential to gain the support of the majority of hierarchically superior officials in administration and operation if there is to be any chance of changing the system. Any change in methods, even if it is supported by the Under-Secretary of State for Education, has to gain the support of the departmental Director-Generals, the division directors and even the schools' headmasters. Traditional methods of negotiation persist, where hierarchically superior people, whether departmental directors or headmasters, tend to get larger increases in budgets than their hierarchical inferiors, using techniques which ignore social factors. Thus at present it is difficult to see exactly how in practice the budgeting and financing process can be 'depersonalized' and based on criteria of economic and educational efficiency.

We are not convinced that a *complete* acceptance of 'technical' criteria for budget allocations is essential. Education deals with the development of people and is one of the most difficult fields of activity to quantify. A pupil enrolled in one school cannot necessarily be compared with a different child enrolled in the same grade of another school. The function of the educational system is far more than producing resources which will be used in the development of the economy. The administrative system in any country is a product of that society and if we say that we would like to see a complete change in administrative relationships, we are in fact saying we would like to see a complete change in the structure of that society. This we do not say, for while we feel that there is room for a considerable re-allocation of educational resources, we are also convinced that the present administrative system, though not based on western concepts of efficiency, does manage to operate an extremely complex educational system with considerable

success and at a very much lower cost than administrative systems in the more developed countries. Any radically different administrative system is unlikely to operate as effectively, given the present social structure. A senior civil servant would be extremely dissatisfied if much of his power were taken away from him through the introduction and enforcement of a large number of norms worked out by officials very much junior to him. In Thailand co-operation is absolutely essential and the introduction of any norms will have to be preceded by a campaign designed to convince those who will have to use them that it is in their interests to adopt them. It will also have to allow individual administrators and headmasters a certain range of freedom so that they still have some say in deciding the budgets for various institutions (yet a much smaller range than they have at present).

In addition, a great deal of identification work still needs to be done before any norms are established. This will involve both a comparative study of the situation in countries with more homogeneous systems of education than Thailand, and detailed study of a large sample of schools, not only to discover more precisely the present range of certain crucial variables and the reasons for this range, but also to analyse what effects these variables might (or do) have on educational achievement.

It cannot be denied that one of the main findings of this, the first part of the study, is that there is a huge range of capital and recurrent unit expenditures, both between different types of institutions and within any given type of education. It is agreed that these wide ranges will have to be reduced if there is to be a rapid expansion of good-quality education, given the financial constraints. However, we are also aware that the establishment and acceptance of costing norms as guidelines for budget allocation will be a very gradual process and will be completely accepted only if severe financial shortages make everyone eager to use the scarce resources to produce the largest possible expansion and improvement of the whole educational system. Therefore, the following chapters do not assume that norms will be introduced.

It is necessary, as far as possible, to produce plans for 'total systems', talking account of economic and educational data and also including social, hierarchical, administrative and other information. The educational system in any country is both the product and, in part, the cause of the social system in which it is situated, and only if all these interrelationships are considered when applying new western management criteria (efficiency) can we be sure that the changed system will better serve the smooth social and economic transformation of the country.

B. Central aspects of the Thai economy during the 1960s

It should be pointed out that we are concerned with the economy only insofar as it produces resources which can be used for education and is dependent on the manpower produced by the educational system. We are not convinced that increased consumption and production are sufficient goals either for individuals or nations, but feel strongly that economic development is only one of several possible tools for improving a society and the awareness and fulfilment of individuals. Education can play a much more direct rôle in real development than any increase in production. Above all else, we see the economy as a source of finance for educational development with economic growth being necessary at times in order to supply the increased resources needed by the educational system and, at other times, a redistribution seeming to be a more effective way of achieving the same results. Of course, whether there is a rapid growth of the economy or a redistribution of existing economic resources, this will have implications on the educational system and the skilled manpower required for operating the economy. Increasingly, educational leaders in Thailand are becoming aware of the need to plan 'total systems'. It is no longer possible to plan education, or the economy, or the transportation system, or the development of communities, or population, etc., separately. All the internal aspects of a particular country are interrelated, and they may also be related to what is happening in other countries. Population growth and increased production in one country can have detrimental or advantageous effects on other countries. Telephones, satellite communication systems, aeroplanes and other modern methods of communication mean that an idea developed on one side of the world can be discussed almost immediately on the other side.

Obviously in a paper as short as this we cannot hope to do justice to new 'total systems' approaches to development. We have, however, pointed out the need to consider all interrelated aspects of development so that the reader is not made to feel that the space we devote to the economy, and to recent and future economic development, reflects any absolute priority we might attach to such a method of 'development'.

1. The economy

The development of the Thai economy 1855-1960

The economy in 1960 was obviously a product of past patterns of development and it might be useful to summarize previous developments very briefly so that it can be seen in a proper perspective. The modern Thai economy began in 1855 when the country was opened up to foreign trade with western nations. During these early years it grew rapidly through specialization away from a situation of virtual self-sufficiency, so that just before the Second World War, with all tin and rubber production being exported, and half the teak and rice, Thailand had essentially become an export economy.

From 1870 to 1939 exports grew at a compound rate of 3.7 per cent per annum, the growth rate declining gradually throughout the period. After the Second World War the rate of growth was rapid until 1951, due both to a recovery from the depressed war years and to the Korean War boom, but after 1951 the rate of growth of exports slowed down to 5 per cent per annum. This can be attributed more to a slow growth in the volume of exports than to a fall in prices, for during the period under consideration Thailand's export prices have always been favourable, except during the great depression.

During the early part of the period (1870 to 1910) rice exports increased at over 5 per cent per annum. However, thereafter the rate slowed down to an average of 1.5 per cent per annum: about the same rate as total production. The increase in rice output was achieved not through a change in technology but through an expansion of the cultivated area and an increase in labour productivity.

As with rice, teak exports grew rapidly until 1910 and thereafter stagnated. It is not easy to increase dramatically the production of teak over any length of time for it takes between 60 and 300 years from planting to felling.

Tin production increased at a rate of 2.4 per cent per annum from 1903 until the beginning of the second world war, but production almost ceased during the war and post-war recovery was very slow, the pre-war production level being achieved only in 1957.

With rubber, a relative newcomer to Thailand, the post-war rate of increase in production responded well to the growth in demand despite the fact that a rubber tree takes seven years to mature. However, as most rubber in Thailand is grown on small-holdings, it has proved (and still is proving) difficult to increase productivity through replacement and mechanization as swiftly as would have been liked.

Until the second world war Thailand was basically an export-led economy with economic growth dependent on these four export items. After the war there was a major change in the pattern of development with services and infrastructure growing rapidly and internal growth accelerating, and thus the ratio of exports to GNP fell.

From 1902 to 1932 Thailand was on the gold standard, with the exchange rate changing only twice during this period; in addition the government was pursuing

very conservative monetary policies by maintaining both balance of payments and budgetary surpluses. No real effort was made to mobilize resources for rapid economic and social development.

The government also applied a policy of free trade throughout most of the period, largely enforced through a number of commercial treaties between Thailand and western countries negotiated during the latter half of the nineteenth century. Not until 1929 was Thailand allowed to impose an import tax greater than 3 per cent.

Only recently did the government start to promote industry. Although there has been considerable foreign investment in manufacturing industry in Thailand during the period under consideration, foreign companies were taxed quite heavily with, for example, 70 per cent of teak profits being taxed. Despite this, very little real development effort was undertaken; a few foreign loans were used mainly on railway development, with a little also going to irrigation.

It was not until the first six-year plan started in 1961 that a conscious effort for rapid social and economic development began. Although there had been a reasonable rate of development (particularly after the Second World War), this was not the result of any planning but rather of the desire of a large number of Thais to improve their material well-being. Abject poverty has never been a real problem and most Thais have had enough to eat and somewhere to live. There was, however, a rapid increase in population growth and even more rapid urbanization, with the fastest increase taking place for both in the period after the Second World War.

The economy during the first two development plans, 1961-71

In 1957 the government invited the World Bank to send a mission to analyse the economy and recommend a course of action. One year later the mission submitted its report, which included an outline of public expenditures and suggestions for a complete reorganization of government administration in order to make planning a central function of government. Thus in 1959 the National Economic Development Board (NEDB) was founded within the Prime Minister's Office.

The first six-year National Economic Development Plan started the period of serious planning in Thailand in January 1961. It was divided into two phases; the first was little more than a central government resource allocation plan with a few rough projections of major production targets; the second phase involved a complete revision upwards of all the plan targets and, although the private sector was included marginally, the plan still remained little more than a programme of organizing public sector revenues and resources. In addition little attempt was made to plan for the implementation of the various targets. Despite the inadequacies of the first plan it was a definite improvement over the haphazard method used previously, as goals and priorities were worked out for the first time.

The second five-year plan was a further improvement with far greater attention paid to project identification and preparation, with projections for the public sector including local government and state enterprises, careful balance of

payments' calculations worked out and, for the first time, manpower and labour force projections were included. Overall economic targets were also set, including proposals for changes in the sectoral balance and other key variables.

Despite the improvements in the planning process which took place during the 1960s and during the preparation of the third five-year plan (including the preparation of annual and regional plans), Thailand is still very far from having a planned economy or even a comprehensively-planned government sector. The planning consciousness among senior civil servants in many ministries is still not well developed, the plans prepared are still not particularly sophisticated and, most serious of all, there is as yet no effective national mechanism for ensuring that the plans are in fact implemented.

The lack of a really effective economic planning process has not prevented Thailand from making considerable economic progress during the last decade. The GDP has been growing at a rate which would make most countries, both developed and developing, envious of Thailand's good fortune. Over the whole decade GDP, at factor cost, grew at 10.2 per cent per annum, the rate accelerating from 9.2 per cent per annum during the first half of the decade to 11.5 per cent during the second half. Signs are however appearing (from preliminary and incomplete statistics) that this rate of growth is slowing down. The price index increased during this same period, growing at an average rate of 2.1 per cent per annum.

During the 1960s there has been considerable sectoral change in the composition of GDP as can be seen in Table 6 of Appendix I.

It can be seen from the table that there has been relatively little expansion in the directly productive sectors, with agriculture growing considerably more slowly than the total GDP, while manufacturing has maintained only the over-all growth rate. The most significant increases were in the construction and commercial sector. As the share of housing in GDP fell during the decade it is unlikely that these increases produced any significant improvement in the standard of life of the average Thai. In fact all the data that are available point to the conclusion that the benefits of the rapid development over the past decade have been received by only a small non-agricultural minority of the population. We are not, of course, suggesting that the agricultural population has made absolutely no progress, but the benefits of development have not been distributed evenly and the mass of the population has made only very scant economic progress.

The three major commercial agricultural products in Thailand are rice, fruit and rubber (see Table 1 in Appendix I). Rice is the staple food of a large proportion of Thais, although there is some surplus for export; fruit is almost entirely consumed within Thailand; rubber is almost entirely exported. The value of rice produced reached a peak in 1966, but this was largely due to favourable prices in that year. From 1969 onward, production failed to increase due to unfavourable world prices. Throughout the whole decade the output in value has increased at an average only of 7.3 per cent, despite reasonably favourable prices until 1969. The output in value of rubber (Thailand's second major export) hardly increased at all over the decade, while fruit increased at 7 per cent per annum. Some slight

success was made in diversifying agriculture over the decade, with the share of these major crops decreasing from 70.4 per cent of total agricultural output in 1960 to 66.7 per cent in 1969. The output of maize, cassava and vegetables increased at a particularly rapid rate.

In general the government has been pursuing a policy of modernization and mechanization in agriculture, with large dams being built and assistance given to farmers to modernize and mechanize. However, production targets set out in the first two development plans have not been achieved in full, as insufficient attention has been paid to the needs of the small farmer who is still the backbone of Thai agriculture. For example, although large dams have been constructed there are still insufficient ditches and dykes and, while there has been considerable progress in mechanization, not enough attention has been paid to ensure that there is productive employment for the displaced workers.

Apart from the energy industries of electric power and oil refining, most other industries (despite promotional privileges) have found themselves in severe marketing difficulties. With over-all industrial production growing at roughly the rate of growth of GDP, only two groups of industries have achieved growth rates significantly higher than average, petroleum refining (and related plastics production) and transport equipment manufacturing. The former increased its share of total industrial production from 0.04 per cent in 1960 to 7.65 per cent in 1969, while the latter increased from 4.86 to 6.52 per cent over the same period.

One of the main reasons for unsatisfactory industrial growth during the 1960s was the lack of any clear-cut policy for industrial investment. The present policies have created a situation whereby the production of industrial goods always seems to be in excess of demand.

Not only is considerable rethinking required as to how the industrial sector as a whole should be developed (instead of the past concentration on the growth of particular industries), but incentives should be concentrated on those parts that serve the Thai people directly and satisfy their demands, instead of on export. Thailand, with its 37 million people, represents a sizeable market for most types of goods which could be quite easily developed.

One final point should be mentioned and that is the concentration of industrial development in the Bangkok/Thonburi area. This is not only helping to create a dualistic economy, but is often quite inefficient if one adds the social costs of urbanization and pollution to the direct costs of establishing new enterprises.

Over the past decade GFCF has been growing considerably faster than GDP, averaging 16.9 per cent per annum from 1960 to 1969 at current prices and 15.5 per cent per annum at constant 1962 prices (see Table 4 in Appendix I). Despite this high growth in CFGF both government and private consumption have increased rapidly, the former increasing at 15.3 per cent per annum from 1965 to 1969 and the latter at 11.1 per cent per annum over the same period. Both GFCF and consumption have been able to increase faster than GDP because imports of goods and services have been increasing considerably faster than exports. Table 25 shows the changing uses of GFCF over the last decade.

TABLE 25. Percentage distribution of uses of GFCF by purpose, 1960 and 1969

	1960	1969
1. Construction	59.9	53.9
1.1 *Private*	41.6	31.8
(of which residential)	(23.5)	(12.4)
1.2 *Public*	18.3	22.1
2. Machinery and equipment	40.1	46.0
2.1 *Transport equipment*	16.9	14.8
2.2 *Other equipment*	23.2	31.3

Those forms of GFCF that are most likely to benefit individuals (private residential construction and transport equipment) have shown the slowest rates of growth. Public construction (which includes educational construction) has been growing at a rate considerably faster than average, and as can be seen from Tables 4 and 7 in Appendix I, much of this increase has been due to an expansion in educational facility construction, (but also for general office construction).

Both national and domestic savings have increased at a faster rate than GDP (12.6 per cent per annum and 12.3 per cent per annum respectively over the 1960-69 period). There appears to have been a considerable increase in the national savings ratio over the decade, this ratio increasing from 0.171 in 1960 to 0.204 in 1969 (see Table 8 in Appendix I). Table 9 of Appendix I gives details of the national capital account, which shows that government savings have been growing relatively slowly while the savings of corporations have been growing at a fantastic rate, with a more than six-fold increase over the period 1960-69. The high rate of growth of GFCF has also been largely met through increasing balance of payments deficits.

In Thailand, as the vast majority of the population still live and work in the rural areas, there is a relatively high female participation rate in the labour force. Despite a rapid rate of increase in population, with the large number of school-age children that this entails, there is quite a high proportion of the population economically active (over 46 per cent). Even in the urban areas female participation rates at all ages are quite high, and there seems to be little social, cultural or institutional effort to discourage female employment.

Table 26, drawn from Table 10 in Appendix I, shows the change in the sectoral distribution of the labour force from 1965 to 1971.

Although the proportion of the total labour force employed in agriculture has been falling at quite a rapid rate, the absolute number has increased by almost 50 per cent since 1954. The total labour force employed in manufacturing construction, transport, and commerce has virtually doubled since 1954, but more than three-quarters of the population still earn their living from agriculture, producing less than 35 per cent of GDP. It seems likely that for some considerable time to come (probably beyond the turn of the century) the majority of the

TABLE 26. Percentage distribution of the labour force by main sectors

	1954	1960	1966	1971
Agriculture	88.2	83.0	79.8	75.6
Mining	0.2	0.2	0.3	0.3
Manufacturing	2.1	3.6	4.7	5.9
Construction	0.3	0.6	0.8	1.0
Utilities	—	0.1	0.2	0.3
Transport and communications	0.8	1.3	1.6	1.9
Commerce	4.5	6.0	7.1	8.2
Services	3.9	5.2	5.5	6.8
TOTAL	100.0	100.0	100.0	100.0

population of Thailand will depend for their livelihood on the output from the small-farm sector, and any economic or educational development strategy that ignores these people can hardly be considered as serving the needs of the population. During the past decade the agricultural sector has been lagging behind the more modern sectors and the relative position of farmers is worse now than it was in 1960. For example, while in 1960 each 1 per cent of the total agricultural labour force produced 0.53 per cent of GDP, by 1971 this factor has fallen to 0.4 per cent; in all other sectors combined 1 per cent of the total labour force produced 2.6 per cent of the total GDP in 1971.

Even if we ignore the fact that economic development should improve the standard of living of the total population, the development of the agricultural sector in Thailand is incredibly important. Not only does it supply the food for the increasing urban population (the population of Bangkok/Thonburi has been growing at over 5 per cent per annum over the last decade, while total population has been growing at only around 2.7 per cent per annum), but the majority of Thai export earnings come from the agricultural sector and will continue to do so for some time. One of the major constraints that Thailand is likely to face in the long run if it [illegible] policy of conventional development will be a shortage of foreign exch[illegible]

Throughou[illegible] Thailand has had a deficit in the balance of trade growing from [illegible] in 1961 to 12,237 million baht in 1970. Only through large US [illegible] enditures, the increase in tourism and the sizeable private capital inf[illegible] serious balance of payments crisis been avoided. With the US efforts a[illegible]gement in south-east Asia, combined with a possible increase in insurgency, which would decrease Thailand's attractiveness to both tourists and private investors, a real crisis still seems possible despite the government's recent efforts to reduce the inflow of imports. (According to preliminary statistics imports fell in 1971 by just over 1 per cent and the deficit was decreased by almost 3 billion baht). Thus, one of the most crucial aspects that the planner should concentrate on is the increase in export earnings, and the reduction in the imports of non-essentials.

Table 27 shows that, at least as far as imports are concerned, progress has been in the right direction, for although the importation of consumer goods has been increasing, the rate of increase has been much slower than that of capital goods and even slower than the over-all rate of increase of imports. Whereas the rate of growth of consumer goods imports at only 6.4 per cent was slower than the growth of GDP over the period 1960-69, the rate of growth of imports of capital goods was faster at 16.2 per cent per annum. If it had not been for the successful efforts made by the government to reduce imports (further intensified late in 1970) much of the modern sector developments in recent years would not have taken place. Obviously, however, in a democratic *laissez-faire* society there are limits to the restrictions on consumer goods imports. With over 100 per cent import duty on many imported consumer goods items, it seems that these limits have almost been reached (presuming that the present structure of society is maintained, and presuming also that the government desires to continue to raise a significant proportion of its revenues through import duties). Thus, if further progress is to be made in balancing the foreign trade of the country, it is very important that exports are increased as rapidly as possible.

TABLE 27. Composition of imports 1960, 1965 and 1969 (in percentages)

	1960	1965	1969
Consumer goods	35.0	27.0	22.8
Intermediate and primary products	18.1	20.8	22.6
Capital goods	24.6	30.9	35.3
Vehicles	7.8	9.4	9.7
Others	14.5	9.4	9.6
TOTAL	100.0	100.0	100.0

Between 1961 and 1970 exports were growing at an average of only 4.4 per cent per annum, compared with imports which grew at 11.4 per cent per annum. Thailand's two major exports are rice and rubber and in 1960 these two crops alone made up almost 60 per cent of total export earnings (see Table 28). However, their value in 1969 was almost the same as it had been in 1960, and their share had decreased to only about 38 per cent of total exports. This unsatisfactory export growth of Thailand's two major exports was partly due to unfavourable price movements (of rice through the green revolution starting in many of Thailand's traditional customer states; and of rubber due to increased competition from synthetics) but it was also due to a small rate of increase in exportable production. Very fortunately there were improvements in the export earnings of various other primary products, particularly with tin, maize, tapioca and jute, all of which almost doubled their share of total exports between 1960 and 1969.

The prospects for exports are not particularly encouraging. It is likely that more and more countries will become self-sufficient in rice and substitution

TABLE 28. Breakdown of exports by major products (millions of baht)

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Rice	2 570	3 598	3 240	3 424	4 389	4 334	4 001	4 653	3 775	2 945
Rubber	2 579	2 130	2 111	1 903	2 060	1 999	1 861	1 574	1 816	2 664
Tin	537	617	685	741	962	1 166	1 361	1 822	1 510	1 631
Maize	551	597	502	828	1 346	969	1 520	1 355	1 556	1 674
Tapioca products	288	446	423	439	653	676	644	726	772	876
Jute and kenaf	230	626	579	358	495	1 102	1 614	866	674	780
Teak	356	252	170	137	179	201	243	194	169	166
Others	1 530	1 731	1 819	1 849	2 255	2 494	2 855	2 976	3 407	3 976
TOTAL EXPORTS	8 641	9 997	9 529	9 679	12 339	12 941	14 099	13 166	13 679	14 712

SOURCE Bank of Thailand

of natural by artificial rubber will continue. The known resources of tin in Thailand are quite limited and jute and kenaf are likely to be increasingly replaced by synthetic fibres. Because of various international restrictions and the relative inefficiency of many new industries, Thailand has not as yet made much progress at promoting industrial exports despite the excess capacity already in existence.

Even though there appear to be difficulties in promoting exports and restricting imports, steps should be taken now to get nearer a balanced position, dependent neither on US expenditures nor the influx of private capital. Whereas in 1960 the trade deficit was only 3.4 per cent of GDP, by 1970 it had grown to 19.2 per cent of GDP (or exports being 86 per cent higher than imports).

We are concerned about the balance of payments, not because the educational system needs large quantities of foreign exchange, but because the pattern of growth that Thailand is pursuing at present depends upon imports for its success. In fact the import content of education is very low, only 20 to 30 per cent of education's physical facilities consist of imported materials (and this proportion could be reduced significantly without too much difficulty), and a very small proportion of recurrent expenditures goes on goods or services originating outside Thailand. Thus, while the educational sector is not directly contingent upon the rest of the world for its development or operation, there is an indirect relation, for about 80 per cent of its resources come from the government and the government revenues are very dependent on exports and imports, with about one-third of the total revenue coming from customs duties. Much of the remainder of government revenue is dependent on the health of the economy, which in turn is subject to the balance of payments.

Another reason for a considerable improvement in the balance of trade is the likely increase in the burden of debt servicing (see Table 29). At the moment the burden is not too great, with only 3.3 per cent of total receipts of exports of goods and services going to debt servicing in 1970 (or 5.2 per cent of merchandise exports). If present trends continue, 4.8 per cent of the total receipts from goods and services will be needed in 1980 (or 10.7 per cent of merchandise exports).

Throughout most of the 1960s Thailand had a balance of payments surplus (see Table 30). Therefore, government overseas borrowing has not been large, but, with the first over-all deficit in 1969, increasing problems and the policies of the third five-year plan will cause a considerable influx of official foreign capital. This short-term measure will bring temporary relief to the balance of payments problem, but in the long run complete rethinking along structural lines will be necessary if a crisis, with all its unfortunate side effects, is to be avoided.

One of the major problems Thailand is facing, in common with most other developing countries, is a very rapid rate of population increase. Even before the Second World War, from 1927 to 1937 Thailand averaged a 2.9 per cent per annum growth in population, probably one of the highest growth rates in the world at that time. More significant, however, is the fact that this rate of growth has increased to over 3 per cent per annum over the last twenty years and has probably continued at this level to the present day. We say 'probably', for while the 1970 census showed a population of 34.9 million, involving a growth of only

TABLE 29. Evolution of debt servicing (millions of baht)

	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
1. Debt service (capital + interest)	354.85	378.98	366.08	412.88	516.26	784.99	796.85	744.22	894.61	774.59
2. Receipts from exports of goods and services	11 076.4	10 838.4	11 161.0	14 038.8	15 386.6	19 341.9	21 398.4	21 596.3	22 206.0	23 590.0
3. Coefficient of debt service (1 as % of 2)	3.2036	3.4967	3.2799	2.9411	3.3552	4.0584	3.7238	3.4460	4.0286	3.2835

SOURCE NEDB

TABLE 30. Balance of payments (millions of baht)

	1962	1963	1964	1965	1966	1967	1968	1969	1970
Merchandise									
Export	9 434.5	9 577.7	12 165.0	12 663.5	13 817.2	13 808.1	13 227.6	14 267.2	14 256.4
Import	−11 397.1	−12 694.7	14 125.6	−15 219.8	18 296.6	−21 958.3	−23 877.6	−25 564.9	−26 514.5
Balance	−1 962.6	−3 117.0	−1 960.6	−2 556.3	−4 479.4	−8 150.2	−10 650.0	−11 297.7	−12 258.1
Services									
Receipts	1 617.6	1 848.4	2 262.1	3 249.1	6 199.1	8 434.4	9 249.9	9 736.3	10 099.8
Payments	−1 109.2	−1 162.2	−1 529.5	−1 805.3	−2 093.2	−2 521.3	−3 061.4	−3 430.9	−4 058.6
Net service	508.4	686.2	732.6	1 443.8	4 107.1	5 913.1	6 188.5	6 305.4	6 041.2
Unrequite transfers									
Private	106.0	144.9	130.9	146.2	216.3	173.8	140.4	89.2	57.4
Government	804.9	993.3	644.2	650.2	747.6	1 024.4	1 407.1	1 098.0	954.3
Total	910.9	1 138.2	775.1	796.4	963.9	1 198.2	1 547.5	1 187.2	1 011.7
Capital movements									
Private	1 505.6	1 613.6	1 413.8	1 405.5	1 037.9	1 808.6	1 848.3	2 401.0	2 09[illegible].7
Government	—9.8	31.4	229.8	269.7	302.3	446.3	553.0	196.4	11.2
Total	1 495.8	1 645.0	1 643.6	1 675.2	1 340.2	2 254.9	2 401.3	2 597.4	2 [illegible]05.9
Recorded balance	952.5	352.4	1 190.7	1 359.1	1 931.8	1 216.0	−512.3	−1 207.7	−3 099.3
Net error and omissions	342.4	596.3	239.6	625.9	1 373.8	97.0	962.0	293.9	447.3
Over-all balance	1 294.9	948.7	1 430.3	1 985.0	3 305.6	1 313.0	449.3	−913.8	−2 652.0

SOURCE Bank of Thailand

2.7 per cent per annum from 1960, there is considerable evidence to support the thesis that there was some under-enumeration, particularly in the central region of the country, due to the underpayment of the enumerators. Most demographers tend to believe that there was no slowing down of the population growth rate in Thailand during the 1960s. Thus, if the current rate of growth persists, Thailand is likely to double her population within twenty-two years. (By 2040, we have estimated that the population will be between 117 million and 202 million, depending on how readily the population will accept the idea of controlled family size. Both figures are frightening.)

Of course, population growth is only a function of the birth and death rates. All the available evidence indicates that the birth rate has remained quite constant at between 40 and 45 per thousand (in 1967 it was calculated at 41.8 per thousand) and up to the present has shown little sign of decline, with Thai women maintaining an average of 6.5 births by the time they complete their reproductive cycle. There is still potential for the rate of population growth to increase, for infant mortality is still over fifty per thousand live births, and maternal mortality four per thousand deliveries. Although immigration into Thailand in the late nineteenth century was significant, it is now of negligible importance.

The real reason for the rapid and growing increase in population is the fall in the death rate. During most of the first half of the twentieth century this remained quite constant at 30 per thousand, but after the Second World War it began to decline dramatically, falling to only 10.9 per thousand in 1967. Life expectancy also has increased dramatically from thirty-five years in 1937 to fifty-five for men and sixty-two for women in 1968. This fall in the death rate and consequent increase in life expectancy was the result of the expansion of modern medical facilities throughout the country. For example, the annual death rate from malaria declined from 3.5 per thousand in 1943 to 0.38 per thousand in 1958 and to only 0.1 per thousand in 1968.

Both residentially and economically Thailand remains largely a rural agricultural country. In 1967 only 14.3 per cent of the population were living in urban areas, with 56 per cent of these people living in one urban centre, Bangkok/Thonburi. Urban population is growing at nearly twice the rate of the rural population.

Finally, it is of direct relevance to education that children under 15 make up about 45 per cent of the total population and that over 25 per cent of the population 10 years old and above is illiterate.

In 1970 the government became convinced of the need to support and encourage family planning activities in Thailand, and the official government policy aimed to reduce the population growth rate to 2.5 per cent per annum by the end of 1976. Obviously this rate will be decreased further in the long run. Surprisingly the family planning programme seems to have been well received by Thais and preliminary data on the number of acceptors of various devices indicates that the target might well be achieved. However, it is one thing to show people how to avoid unwanted pregnancies and quite another to change the accepted norms of family size. If Thailand is to bring down its population growth rate to a low

and acceptable level, it will be necessary to change people's attitudes about family size. For this it is necessary to introduce some form of population education into the curriculum at all levels of education. Thai educators, aware of these problems, have already started to develop new curricula so that the school will help counter traditional attitudes.

The state of the economy in 1971

With only very incomplete statistics available on any subject for 1971, it is difficult to say whether any of the problems mentioned above is becoming more or less serious. Certainly there are some signs of an upturn in the economy, with exports of some agricultural products showing some improvement, and imports actually falling due to the large increase in import duties in 1970. Whether this improvement in the balance of trade was structural or just a temporary improvement due to the postponement of import orders and the running down of stocks, cannot yet be confirmed. There also seems to be a ready acceptance of family planning devices by Thai women, which suggests that the population growth target will be possible. The increase in import duties also gave a welcome boost to many local industries that had previously been operating at excess capacity.

Despite these bright spots the general state of the economy in 1971 was not very healthy. Overall rates of growth decreased owing to the reduction in US military spending (which might increase again this year, 1972); urban and educated unemployment began for the first time to become real issues; in certain areas of the country land shortages began to be significant; and no real method had yet been evolved for lessening the gap between rural and urban *per capita* incomes and increasing the equality of opportunity.

The reduction in US military expenditures seemed to have quite serious repercussions in many sectors of the economy. It is however hoped that many of these repercussions will eventually lead to a better utilization of national resources. For example, the reduction in the growth of the construction industry could lead to more socially productive activities such as housing. It has also produced a slowing down of the growth of the service sector, with bowling alleys, bars and massage parlours closing down. Although GDP will almost certainly be affected by the reduction in the US military presence in Thailand, the change in values and utilization of GDP that this would cause is almost certainly of benefit in the long run, for it is obviously not wise to base the future of an economy on the military spending of a foreign power.

The three major problems that are faced by the Thai economy in 1971 remained much as they were throughout the 1960s. Firstly, although there was an improvement in the balance of trade, this improvement did not suggest any long-term structural change; although exports increased considerably in volume and in value, there was a significant fall in unit prices of Thailand's four major exports (rice fell 21.7 per cent in 1971; maize fell 13.5 per cent; rubber 22.6 per cent; and tin 1.2 per cent).

Secondly, although the value of agricultural production increased in 1971, the gap in standards of living between urban and rural populations was not significantly decreased. There are several reasons to explain this phenomenon: marketing co-operatives are not necessarily producer co-operatives working entirely in the interests of the small farmers and much of the benefit of the increased production goes to various middlemen; the government's efforts to help farmers benefit the larger farmers; the improvement of communications has allowed various types of carpet-baggers and other more sophisticated urbanites to penetrate into rural communities (much as happened during the opening up of the American west during the nineteenth century) and the exploitation of the peasants has increased temporarily until they too become more sophisticated.

Finally, while the new population policy seems to be having some success, this is not so in the more remote areas where a rapid reduction in the population growth rate is necessary if there is to be a significant improvement in the standard of living.

The government's future efforts to develop the Thai economy along conventional lines depend upon solutions being found to these three problems. Modernization is contingent on a solution to the endemic balance of trade problems. Stability is dependent upon a reduction of the current inequalities of income and opportunity. The long-run standard of living and standard of life of Thais is subject to a very rapid reduction in the rate of population growth, particularly in the poorest areas of the country. There are, of course, other problems, such as growing under-employment at the same time as shortages of certain crucial categories of manpower (or even regional shortages of otherwise surplus manpower), rural/urban migration, poor planning of industrial development and growing land shortages, just to mention a few. However, if the three major problems mentioned above could be resolved, the economy and the entire population would be well on its way to a bright future.

2. The government budget

Central government revenues and expenditures

Despite a rapidly growing economy throughout the 1960s, with increasing imports and import duties, government revenues have failed to expand much faster than GDP. Over the period 1962 to 1970 government revenues increased at only 11.3 per cent per annum, and their share of GDP grew from 11.8 per cent in 1961 to an estimated 14.1 per cent in 1970. Thus, throughout the 1960s the budget deficit has been growing because expenditures have been increasing at an average of 13.0 per cent per annum from 1963 to 1971. The deficit is shown in Table 31.

Since one of the main reasons for the high shortfall in expenditures compared with approved budgets is the delay in releasing budgets, caused both by shortages of revenues and poor planning, we will concentrate our discussions on revenues.

TABLE 31. Budget deficits (millions of baht) and shortfall in government expenditures, 1963-70

	1963	1966	1969	1970
Approved government budget	10 780.0	15 140.0	23 960.3	27 299.9
Government revenues	8 880.0	12 912.6	18 350.3	18 873.3
Anticipated deficit	1 900.0	2 227.4	5 610.0	8 426.6
% of anticipated deficit over revenue	21.4	17.3	30.6	44.6
Actual expenditure	9 589.0	13 958.0	21 703.0	25 135.0
% of approved budget spent	89.0	92.2	90.6	92.1

With the budget deficit growing year by year something needs to be done soon to increase government revenues, for it will be extremely difficult to hold the rate of expenditure down to the very low increase of just under 5 per cent for 1970/71. With the increasing insurgency problems, national security and defence expenditures are bound to increase (between 1963 and 1971 they increased at an average of 16.1 per cent per annum). The pressures on the government to expand educational and health expenditures will require a rapid increase in expenditures (even assuming that there is no increase in government salary scales).

According to many public finance and taxation experts, there is not very much point in increasing taxes as the slow growth in revenues compared with the growth in GDP is not because the wrong taxes are being levied, but because of inefficiency in their collection. It is important that the government revitalise the whole tax collection system, not only so that revenues are increased, but also to achieve its policies of redistributing income

We are not, of course, against deficit financing in principle, but feel that if the current planned level of 6.3 per cent of GDP is maintained for any period of time, this will be likely to lead to inflationary pressures which will further worsen inequalities of income distribution. We feel that the government should not aim for a level of deficit financing much more than about 4 per cent of GDP in the long term. (Because of under-expenditure the actual level of deficit financing at the moment is lower than the planned figure, i.e. 4.7 per cent of GDP.)

It might be useful at this stage to discuss how government revenues from different sources have increased over recent years. Table 5 in Appendix I shows the evolution of the share of total revenue from various sources.

The major proportion of taxes collected are indirect (both sales taxes and customs duties), with direct income taxes providing only about one-tenth of total revenues. The most significant change in the revenue pattern over the decade is the reduction in revenue from export taxes, both in relative and in absolute terms. This is the result of failing commodity prices and the government's desire to reduce inequalities in income between urban and rural population. Import duties have not grown as rapidly as the increase in imports, despite very high rates of duty, because consumer goods (on which the duty is highest) have developed very much more slowly than the over-all growth. It seems therefore that there

is little potential for increasing revenue from import duties (particularly as the avoidance of these taxes is probably much less than with most other taxes).

The largest potential source of new revenue is almost certainly income tax, both personal and corporation. With personal income tax, any reasonable estimate of the current distribution of incomes would lead to the conclusion that, even at existing rates of taxation, collection could be very much higher than it is at the moment. Certainly a great deal of avoidance exists with corporation income tax, both through legal loopholes (which should be plugged) and through other more dubious methods. Sales taxes, which have taken over from customs duties as the most important source of government revenue, are probably avoided relatively little, particularly with the larger industries. However, as long as the economy maintains some buoyancy there should be considerable future potential for increasing revenue from this source. Table 32 analyses some of the elasticities of government revenue collection over the past few years.

TABLE 32. Marginal propensity of taxation growth per annum compared with selected variables, 1962-70

	Average p.a. 1962–66	Average p.a. 1966–70	Average p.a. 1962-70
Income tax/GDP	1.25	1.98	1.52
Sales taxes (general)/GDP	1.17	1.44	1.27
Selective sales taxes/GDP	1.78	1.79	1.78
Export duties/exports	0.52	0.09	0.20
Import duties/consumer goods and vehicle imports	0.78	2.50	1.31
Other revenues/GDP	1.10	1.57	1.28
TOTAL REVENUE/GDP	1.01	1.39	1.15

It can be seen from the table that there has been considerable improvement in the elasticity of most major taxes over recent years. It is only because of the rapidly falling export duties that over-all revenue has been growing only slightly faster than GDP.

How the government is going to mobilize increasing revenues is one of the most crucial problems that will have to be faced, and solved, over the next few years. Only if effective solutions are worked out will it be possible for the government both to continue to maintain internal security and to increase the standard of living of the population. Obviously the government must not only concentrate on increasing revenue, but must also do everything possible to ensure that this revenue is being used as efficiently as possible so that expenditure increases in all fields are kept as low as is feasible.

We have already analysed in some detail the evolution of educational budgets and do not intend to devote too much time or space to the budgets of other government ministries and organizations. However, despite the considerable potential for savings that seemed possible with the educational budget, we are

under the impression that considerably greater effort is already being devoted to planning educational expenditures than is being devoted to planning any other field of government activity. Thus, there is likely to be as great a potential for increasing the effectiveness of the utilization of resources in other government ministries as there is with education.

Table 33 shows the growth of total government expenditures during the last decade.

TABLE 33. Growth of government expenditures by function, 1961-70

	% share 1963	% share 1970	Average growth % p.a. 1963-70
Economic services	25.7	28.8	16.0
Education	14.5	15.2	15.0
Health and social services	12.4	11.3	12.6
Defence and national security	22.4	24.2	15.4
General administration	9.9	5.9	6.1
Government debt	11.4	8.6	9.6
Unallotable items	3.7	6.0	22.0
TOTAL	100.0	100.0	14.2

Apart from the high growth of defence and internal security expenditures (which is necessary given the current security situation of the country), the table shows an encouraging trend in the growth of government expenditures, with the non-productive fields of administration and the government debt diminishing their share, and most other activities, with a direct impact on the mass of the population, growing rapidly and increasing their share.

Of all the expenditures undertaken by the government, about 50 per cent are classified as development expenditures. They are only partly financed through the government budget (about 38.6 per cent of the budget being used for this purpose in 1971 and 38.9 per cent in 1967) and partly self-financed or financed with loans or grants. In 1967 72.7 per cent of development expenditures came from the budget, 12.7 per cent were self-financed, 7.5 per cent from foreign loans and 7.1 per cent from grants. In 1971 the equivalent figures were 71.6 per cent, 15.6 per cent, 9.0 per cent and 3.7 per cent respectively.

The term 'development expenditures' is rather difficult to define as it covers all recurrent and capital expenditures that can be considered as helping to develop either physical or human capital, as well as all other capital expenditures, and it also includes the increase in recurrent expenditures of all ministries that play either a direct or indirect role in the social or economic development of the country. Thus virtually all educational expenditures are classified as development expenditures.

Although the term 'development expenditures' is not at all clear, it does seem to cover the majority of expenditures that are not devoted to either national

defence or administration, particularly all increases in expenditures. Thus an analysis of development expenditures does give an indication of the relative priority the government attaches to progress in different sectors. Table 34 shows the change in the utilization of development expenditures between the beginning and end of the last five-year plan.

TABLE 34. Percentage distribution of development expenditure by sector, 1967-71

	% of total 1967		% of total 1971	
Agriculture and irrigation		16.2		12.6
Industry, mining and commerce		3.2		2.3
Transport and communication		23.5		22.6
Power		6.7		11.3
Social development		2.7		2.7
Urban and rural development		13.5		8.6
Public health		5.4		5.5
Education		22.7		28.8
Others		6.1		5.6
TOTAL (million baht)	(10 278)	100.0	(15 440)	100.0

It can be seen that education and power have considerably increased their share of total development expenditures during the second five-year plan period, while all other sectors have either maintained their share or undergone a considerable reduction. Thus, with education being one of the biggest growth sectors of government development expenditures and with these being the part that would be cut if the need arose, the future progress of education is very dependent on the increase of government revenues and the solution of the serious budget deficit situation.

During the coming decade it is absolutely essential that the government concentrate on the improvement of tax collection and, in the long run, on the formulation of new taxation systems so that the elasticity of government revenue (compared with GDP) is increased very considerably above its present low level of 1.15. In an economy such as Thailand's, it should be possible for government revenue to rise to at least 15 per cent of GDP (compared with the 14.1 per cent in 1970) and, if this happens, with a reasonable amount of deficit financing total expenditures should rise slightly faster than GDP, so that the share of GDP going to government expenditures would be around 20 per cent (compared with 11.4 per cent in 1961 and 20.3 per cent in 1971). One thing, however, is certain and that is that the past trend of expenditures increasing much faster than revenues cannot continue. If government expenditures are to increase more than GDP, then it is absolutely essential that revenues increase considerably faster than GDP.

Local government budgets

Unfortunately, relatively little information is available on local government finance and what little information we could find was not really comprehensive enough to be used. For the purpose of this study, therefore, we carried out a survey of the local authorities to try to discover both the sources of their revenues and their expenditure by function. The results of this research are shown in Tables 15 and 16 in Appendix I.

With information available for only two years, and even then of somewhat dubious accuracy, it is often difficult to draw any definitive conclusions which might be useful for future budget planning purposes. Nevertheless, certain observations can be made. Firstly, by far the most significant activity of the local authorities is in education. Over 87 per cent of their revenues come in the form of specific educational levies and are thus used for education. It is dificult to define the criteria for allocating these subsidies, but whatever method is used results in a very uneven distribution of central government support for education. So unequal is the level of subsidy at the moment, that the Ministry of the Interior is trying to develop a new equalization formula. This formula will not only consider the number of children in a school and the relative poverty of that district, but will also give some weight to the number of children not in school and the efficiency or otherwise of each district's tax collection system. It is still too early to say whether such an equalization formula can be applied, given the social and hierarchical problems discussed earlier. Nevertheless, with the increase in government budgetary problems, there will be strong pressures to ensure that subsidies are given where they are most needed, and the local authorities will be encouraged to raise as much revenue as they can.

If the increase in local authority tax revenue from 1969 to 1970 (36.4 per cent) is indicative of their ability to improve the efficiency and coverage of their collection system, then in the long run it should certainly be possible for local authorities to finance an increasing proportion of their own educational expenditures. The subsidy can be used as a 'carrot and stick', both to encourage the local authorities to collect more revenue and to discourage them from wasting these extra revenues on burgeoning administrative expenditures. Unfortunately present information is sufficient to identify exactly where the local authorities used their increased revenue in 1970. It appears likely that a considerable proportion was used to increase administrative overheads, but this cannot be confirmed.

To conclude, it does seem from all the subjective information available from officials working in local government finance that most local administrations are collecting only a proportion of the revenue they should be able to collect. Although it is impossible to quantify the potential local participation in the financing of education, it is certain that a new method of giving subsidies to the local authorities could be developed which would encourage then to raise their own revenue and use it for education. It would then be possible to reduce the proportion of local education financed by the central government and achieve a better-quality and more homogeneous educational system throughout the country.

Municipalities' budgets

Table 17 in Appendix I shows the evolution of municipal authority resources from 1965 to 1970. From this table it can be seen that while the total amount of all subsidies in the budget was lower in 1970 than in 1965, the educational subsidy had more than doubled over the same period.

As far as the municipalities' own resources are concerned, there was rapid growth from 1965 to 1967 and thereafter very little change (except for an unusual fall in 1968). It seems strange that despite a rapid growth in their populations, municipalities have not managed to increase their revenues significantly.

However, despite the fact that total municipal revenues hardly increased from 1967 to 1970, there was a very rapid increase in educational expenditures, largely financed through increased subsidies.

We have already pointed out earlier that there is a very large range in the subsidy paid per pupil between municipalities and that there appears to be no logical explanation. This, combined with the fact that there has been no increase in municipalities' tax revenues from 1967 to 1970 (compared with an increase of 8.8 per cent from 1966 to 1967), emphasizes the view that municipalities require an equalization formula for educational subsidies on a par with that for local authorities. Such a formula should encourage the municipalities both to raise as much revenue as possible and to enrol a large proportion of their school-age population in school. The potential for increased municipal participation in the financing of their over-all programmes, but more specifically their educational systems, is great and should not be ignored, particularly as, in general, municipal populations are much more prosperous than their rural counterparts and more able to help themselves.

3. Education and economic development

Educational and economic planning in Thailand

We do not intend in this study to explain the systems of educational and economic planning in Thailand in any detail, but will only briefly draw attention to the extent to which the educational planning process is integrated with that for economic planning.

In Thailand, as in every country, there is some divergence between the theoretical process and the practical reality. Thus, we will first draw attention to the interrelationships that exist between education and economic planning according to the official doctrines and, secondly, try to show the real connexions.

The National Economic Development Board (NEDB), the central planning agency in the Prime Minister's Office, has two divisions which are directly involved in education: the Manpower Division, responsible for making population, labour force and manpower projections, as well as carrying out in-depth research into all of these fields; and the Social Planning Division, which has an educational

section responsible for participating with other organizations in preparing the plan, integrating the draft educational plan with the over-all national plan, evaluating educational projects, mobilizing foreign loans for education, and other general aspects of co-ordination in educational and economic development. There is also the Economic and Social Planning Division, which is responsible for preparing macro-economic projections, including the likely resources available for education. In addition it should be mentioned that the National Educational Council has carried out a cost-benefit analysis of Thai education under the supervision of Professor Mark Blaug.

Officials from the Manpower Division and the Social Planning Division were represented on all the committees charged with preparing the educational plan. In fact during the preparation of the second five-year plan (1967-71) the work of plan preparation was centred on the NEDB. For both the second and the third five-year plans, labour force, population and manpower projections were made and very rough projections of the resources that might be available for education. All the work carried out by the NEDB had only a marginal effect. In the following paragraphs comments will be restricted to the third five-year plan (1971-76) as preparations were only recently completed and we are thus more aware of its shortcomings.

There are two main reasons why much of the NEDB's work had little effect on the plan: firstly because of timing, and secondly because the work carried out was not designed to be immediately useful for educational planning purposes. Let us elucidate these points.

On the question of timing, the third five-year plan went into operation on 1 October 1971. Preparation of the educational plan started in the middle of 1969 and was meant to be completed by the end of May 1971. However, no macro-economic projections were officially available to the educational planning committees until March 1971, no manpower projections until September 1971 (after the educational plan had been finalized), and even now (May 1972) there is no universally accepted population projection. (This last point is certainly not the fault of anyone at the NEDB, but results from problems with the 1970 census.)

With regard to the inapplicability of the design of some of these projections, the following points should be made. Firstly, with the macro-economic projections, constant and equal growth rates were assumed for the expenditures of all types and levels of education, even though past growth rates fluctuated considerably and differed widely from one type of education to another. In addition, no attempt was made to break these expenditures down into capital and recurrent expenditures. This linear equal undifferentiated macro-projection only tended to confuse the members of the educational planning committees, for it took no account of the different policies and targets which had already been agreed upon. Secondly, with the manpower projection, the only detailed over-all projection was by the ILO occupational classification categories, and it was virtually impossible to convert these into educational equivalents, as one category can be covered by the output of several levels of education.

A survey of government employers was also carried out and, on the basis of this

survey, the demand for a few crucial occupations over the plan period was worked out. However, no attempt was made to extend these projections beyond the end of the plan period and thus they would have been of very little value even if they had been prepared in time, for much of the output of high-level manpower is already predetermined at the beginning of any plan period; it is the demand in subsequent plan periods which is more relevant. Finally, as far as the population projection is concerned, with the figures that were provided, no attempt was made to make either total or, more important, age-specific projections for each of the seventy-one *changwads*. Thus accurate information on which to base the expansion of compulsory education was not available.

The cost-benefit analysis was no more useful for, although it was prepared by Mark Blaug in the National Educational Council (the organization responsible for over-all educational planning) and although most of the results were available when he left Thailand in the summer of 1970, no results were distributed until December 1971.

Nevertheless, despite the fact that the Central Planning Agency did not provide the necessary data for co-ordination of economic and educational planning either in the form required or on time, the members of the educational planning committees paid very great attention to economic, employment and population factors, and their conception of education was as a tool for economic and social development as well as an end in itself.

For example, the most important emphasis of the second five-year educational plan was on the quantitative expansion of second-level, technical, professional and teacher education, in order to provide both the middle- and high-level manpower needed for economic development. So successful were these efforts that manpower shortages in most fields were eliminated, and even signs of surpluses began to appear in some fields of education (for example, among certain types of engineers).

In the preparation of the third five-year plan, economic and social aspects were again emphasized as can be seen from this basic list of objectives:

1. To develop the educational system so that it will play the maximum possible role in the social and economic development of the country;
2. To expand lower first-level education to cater for the growth in school-age population, and to expand upper first-level enrolments as rapidly as possible so that universal compulsory seven-year education can be achieved by the late 1980s;
3. To expand second- and third-level education, particularly in the fields of medicine, technology and teacher education, so that the country's future manpower requirements are met;
4. To increase the efficiency of all levels of education by reducing repeater, drop-out and failure rates;
5. To improve and diversify the curriculum at all levels, particularly in rural areas, so that what is learnt is more directly applicable to the future lives of the pupils. It is desired that second-level education courses should provide pupils with a general academic background, while at the same time preparing them either for third-level education courses or for their future vocations;

6. To improve the qualification structure of the teaching force at all levels;
7. To expand and improve education for rural development in order to attempt to lessen the wide disparities of incomes between the rural and urban areas, and between the agricultural and industrial sectors;
8. To expand non-formal education rapidly in accordance with the concept of life-long education.

In preparing the plan, therefore educational planners worked out as guidelines very rough projections of the government resources available for education, unofficial age-specific population projections for each *changwad* of the country, and very rough projections of the employability of various categories of educational output. In addition, the educational planners conceived of education as a tool for rural development and were concerned about making the curricula at all levels more relevant to the needs of the rural community. (In fairness it should also be stated that the NEDB was also concerned with curricular change and is in fact the organization leading the efforts to introduce population education into the curriculum.)

Thus, despite the lack of much useful official data from the economic planners, the educational planners did attempt to anticipate some of the major educational needs of the future development of the Thai economy and society and were frequently given considerable help and advice during the planning process by officials of the NEDB.

What has been said above only emphasizes the need for even greater co-ordination and co-operation between educational planners and economic and social planners. During the preparation of the third plan the educational planners were very willing to co-operate with the over-all planners, who, in turn, were working on preparing information which could have been used by the educational planners, had it been prepared earlier and in a different form. Before the preparation of the fourth plan commences it is absolutely essential that the educational and economic planners get together to co-ordinate the process and timing of the educational and economic plans.

Education and economic and social development

There are many different theories which attempt to explain how education can contribute as much as possible to the development of a nation. Some people are convinced that education can play the greatest role if it concentrates on producing the high- and middle-level manpower needed for the development of the modern sector of the economy. Others feel that education will have the greatest impact if investments are concentrated on those levels and types of education which have the highest rate of return in a cost-benefit analysis. Yet others feel the most significant impact comes from giving the mass of the population the skills, attitudes and knowledge needed to improve their own lives. These and many other theories have one thing in common: they see education not just as an end in itself but as a tool to achieve other objectives, be they the modernization of industry, a maximization of the growth of GDP or the mobilization of the population. It is in fact the

development strategy which differs from theory to theory, rather the concept of the educational system.

In Thailand for a long time there has been an awareness of the role education can play in producing the qualified manpower needed for development. More recently, policy-makers in Thailand have become increasingly concerned with the transformation and improvement of rural communities. They now feel that education can have a considerable potential in this respect. The idea of using cost-benefit analyses, or considering the rate of return from educational investments, has never really been accepted in Thailand. This is partly because the static conclusions from that type of research have not necessarily indicated a given path of action, but mainly because, although it is admitted that the level of educational achievement is used to distribute the available employment opportunities with the higher-paid jobs going to the more highly educated people, it is not felt that by creating more highly educated people more highly paid jobs are created.

Thus in Thailand it is considered that education has a dual economic function: firstly to produce the manpower needed for modern sector development; and secondly to help improve the standard of living in the rural areas of Thailand where 85 per cent of the population live.

Of course, there are many other objectives which are not necessarily related to economic development, but more to the broader aspects of social and individual development. For example, since the better-paid positions in society are distributed according to the level of educational achievement, it is imperative that children from all parts of the country have some chance of progressing up the educational and social ladder. Equality of educational opportunity is encouraged even though allowing such equality is neither the most effective way of producing high-level manpower nor the most efficient use of resources from an economic point of view. Although there is little economic justification for the intellectual development of the individual and for the cultural, social and spiritual role of education, the government gives these functions some priority, for the purpose of development is to improve the quality of life of the whole population. This can be improved *indirectly* through the goods and services that growth in GDP *per capita* allows people to buy, but it can also be improved *directly* through social, cultural, spiritual and intellectual development.

For every fifty children who enter first-level schools in Thailand, only one completes a bachelor degree, and only a few others obtain modern sector employment. Therefore, the 'non-productive', 'non-manpower' oriented functions of the school are of very great importance, particularly as the basic religion of the country, Theravarist Buddhism, can be considered somewhat anti-materialist in its broad philosophy.

To conclude this section, we would like to emphasize the multi-purpose role that education is beginning to play in Thailand. It produces skilled manpower for staffing the small but growing number of positions in the modern sector of the economy. It is a tool which is increasingly used to speed up the rate of rural transformation and development. It has a function of increasing the equality of

opportunity. It is responsible (with other 'educational' agencies) for improving the intellectual ability and awareness of individuals and for the maintenance and improvement of cultural, social and spiritual values. The economic function is only one of many different functions and should not be over-emphasized. It is felt that very often men become the servants of the economy rather than, as it should be, the economy the servant of man. The educational system should be used to serve the economy only as long as this does not prevent it serving man.

PART TWO: EXPANSION AND IMPROVEMENT OF THE EDUCATIONAL SYSTEM AND ITS FINANCING

A. Expansion in enrolments, 1972-80

In Part Two of this paper the enrolments of the formal educational system will be projected in detail on the assumption that past trends and the proposals of the third five-year plan will continue. For the four years beyond the end of the plan we will also work out alternative hypotheses for educational development. A rough projection will be made of the likely development of the economy over the coming years and from this an estimate of the central government resources available for education over the period 1972-80 will be made. The cost to the central government of the basic alternative will then be worked out in detail (assuming no change in either utilization patterns of teachers and facilities or in methods of financing), and the difference in the cost of the other alternatives compared with the basic alternative will be estimated. From all these figures the financing gap for each alternative will be calculated. Finally, proposals will be made as to how the financing gap might be closed. Some of these will be costed out in detail, while others can only be listed while the necessary data for a specific calculation is lacking.

1. The basic alternative

During the preparation of the third five-year plan, there was not only much discussion over the direction of development of the Thai educational system, but also considerable study of the past quantitative expansion and of the variables which affected this expansion. As the author of this study was involved in all aspects of the preparation of the plan, and since the targets included in the plan reflect the official government policy, it has been decided to include in this study only one alternative of enrolment expansion up to 1976 (the last year of the plan). The other alternatives really apply only to the period after 1976. The alternative included in the third five-year plan, which is projected through to 1980, has been called *the basic alternative*.

ENROLMENTS

The objectives of the Third Five-Year Educational Plan, on which the projected enrolments were based, were outlined above (page 97). It can be seen from these objectives that the priority area for enrolment expansion was at the upper first level (in order that universal compulsory first-level education could be achieved as quickly as possible). The reduction of wastage at all levels of education was stressed and also the production of certain crucial types of high-level manpower, particularly in the fields of education and health.

Unfortunately, when projections were made on the basis of these rather general policy objectives, taking into consideration the views of political and educational leaders and the desires of the population for education, it was found that many of the necessary basic data were not available. Thailand has, compared with many other developing countries, reasonably comprehensive statistics, but they take rather a long time to process and were not designed specifically for planning and projection purposes. Therefore, many of the crucial variables had to be calculated from incomplete data.

For example, there were no comprehensive data on repetition and drop-out rates for any level or type of education, nor were there data on the net progression from one level of education to the next. In addition the reported age of pupils was not consistent with the population figures supplied by the National Statistics Office (NSO) since it appeared that something like 105-110 per cent of children were entering school. Finally, for the more detailed regional and district projections of enrolments (not shown in this study) there were up-to-date statistics neither of the existing districts' population, nor on their age distribution. As was mentioned earlier (page 96) there were no official manpower projections on which to base the projections of second- and third-level education.

The analysis showed that wastage was particularly high at the lower first level. It was decided that steps should be taken to reduce it. Obviously the wastage, in the form of both drop-out and repetition, was not entirely caused by the school system, but was partly due to the socio-economic background of the pupils. From the research findings that were available it seemed that at the first level about two-thirds of the wastage was caused, at least indirectly, by the inefficiencies of the existing school system, while the remaining one-third was caused by poverty and other socio-economic factors. It was therefore decided to plan to reduce the school-related wastage by 50 per cent by the end of the plan period (1976) and by a further 50 per cent by 1980. Minimum drop-out and repeater rates for first-level schools were fixed (2.5 per cent per annum by 1980).

The most reliable population projection available, involving a growth of the 7-10-year-old population of 3.2 to 3.1 per cent p.a., was used to establish the intakes into first-level schools. Alternative population projections were not used since the difference these would make in the costs over a nine-year period were so marginal that it did not justify the extra effort involved.

The official age of entry into first-level school in Thailand is seven, but considerable numbers of both over-age and under-age children do in fact enter school.

For example, in 1969 50 per cent of the total intake was made up of seven-year-olds, 35 per cent of children under 7 and the remaining 15 per cent of children over 7. During the past few years there had been a clear trend with the proportion of over-age children entering schools declining and that of under-age rising. It was therefore decided that by 1976 all over-age entrants should be eliminated and the intake in that year and in succeeding years would be made up of 50 per cent of the six-year-old population, and 50 per cent of the seven-year-old population. Thus quite a rapid growth in intakes was projected during the early years of the plan as the backlog of over-age children was being catered for and, thereafter, the growth of intakes would be at roughly the rate of growth of the school-age population. As the repeater rate at P1 was falling throughout the period, P1 enrolments grew only very slowly between 1976 and 1980.

With known intake, repeater and drop-out rates, enrolments in lower first-level education could be calculated (See Appendix II.)

For upper first-level education it was assumed that the gross progression rate P4/P5 should increase as fast as the plan budget would allow (estimated on the basis of the past trends). This involved increasing the P4/P5 progression rate from 33.5 per cent in 1968/69 to 44.3 per cent in 1972/73, to 53.5 per cent in 1975/76, and continuing the trend to 63.0 per cent in 1979/80. Again, using the estimated drop-out and repeater rates, the enrolments could be calculated.

As many first-level schools also have kindergarten or pre-first-level classes, it was also necessary to make some projections for pre-school education. The past trend, showing a steady growth of 9 per cent p.a., was used for future projection, particularly as pre-first-level enrolments were of only slight importance compared with total first-level enrolments.

We next projected the university enrolments on the assumption that total output should grow at 8 per cent p.a. (slightly faster than the planned rate of growth of GDP of 7 per cent p.a.). The only specific information available for the university enrolment projections by field of study were the past enrolment and output figures, the proportion of new graduates unemployed at the time of their graduation and a study of medical manpower requirements we had made ourselves. On the basis of these data it was concluded that, in order to produce the 8 per cent p.a. over-all increase in output (taking account of changing progression rates): the medical intake would have to grow at an average of 13 per cent p.a.; Agriculture and engineering at 12 per cent p.a.; education at 8 per cent p.a.; natural science at 7 per cent p.a.; humanities, law and social science at 5 per cent p.a.; and fine arts at 3 per cent p.a. In distributing these macro-enrolments to different faculties in different universities some further minor adjustments were made to these figures (but not to the total). Nevertheless, they still reflect the relative priorities of the expansion of university enrolments both during the third five-year plan and until 1980.

We had the greatest difficulty in making projections of vocational and technical education. Firstly, this was because there were no reliable statistics on the private system and an over-all enrolment projection could not be made; secondly, because there were a large number of non-formal, semi-school or out-of-school vocational

training schemes which were difficult to relate to the qualifications of the formal system; thirdly, because even the public system was not homogenous but had a large number of different courses of varying lengths and quality; and, finally, because there were no official manpower projections and even the labour force data that were available did not seem particularly reliable. Even though vocational and technical education have unit costs higher than ordinary second-level education and very much higher than non-formal education, more is still desirable and necessary. Taking account therefore of the wishes of the population and of leading educators, the projection of upper vocational and technical education was based on the assumption that output should grow at 8 per cent per year and that there should be some reduction in wastage rates. These projections were broken down into the different types and lengths of courses, with the fastest expansion taking place in middle- and high-level technician training and in the production of certain categories of technical and vocational teachers. Again, some minor alterations were made in the over-all projections when the enrolments were distributed between schools.

It was decided to abolish lower second-level vocational education gradually, as it appeared that it was not offering a vocational background as good as were the newly established comprehensive schools, and this lack of success was costing considerably more than the unit cost in type I comprehensive schools. Thus, throughout the period lower vocational school enrolments were projected to decline.

It is at the upper second level that there are the highest repeater and drop-out rates in the entire educational system. Originally therefore, in preparing the third five-year plan, it was decided that the proportion of MS5 qualifiers going on to university should be maintained at the past figure of 80 per cent, and that most of the increase in outputs required should be met, not through increases in intakes, but through reduction in these very high wastage rates. Unfortunately this methodology produced such a low growth in enrolments (even though outputs were growing at over 8 per cent p.a.), that the social aspirations of the population for upper second-level education would not have been met. The original projection had to be stepped up, involving an increase in government school intakes of about 9 per cent p.a. and private school intakes of about 3 per cent p.a. With a rapid increase in efficiency also planned, output from MS5 is likely to increase faster than the intake requirements of conventional universities, the excess output being absorbed in the new open university of Ramkamhaeng.

At the lower second level, during much of the 1960s some 80 per cent of the qualified output found places in some form of further education or other. With the rapid increase in intakes in 1969 and 1970 this proportion is likely to have fallen to only 50 per cent by 1972/73. It was decided to allow no further fall in this proportion as the many graduates of MS3 were already finding it difficult to get employment. (The numbers looking for employment have increased more than three-fold over the last three years). Thus MS1 intake was planned on the assumption that there would be some improvement in repeater and drop-out

rates and also that at least 50 per cent of MS3 qualifiers would find places in further education.

As far as adult and non-formal education are concerned, discussions were held with the organizations concerned to see how fast enrolments and other activities could expand, given certain administrative and manpower constraints. Great priority was attached to the expansion of non-formal and out-of-school educational activities and the largest feasible expansion was allowed.

DIVISION OF FIRST-LEVEL ENROLMENTS

Before any cost or teacher projections could be made it was necessary to break down the various projections by administrative agency. At the pre-first and first levels, four distinct agencies operate schools: the local governments through the Ministry of Interior; the municipalities; the Ministry of Education; and private organizations and individuals. At all other levels there are only private and government institutions (either the Ministry of Education or the Prime Minister's Office for universities).

Because of the poor quality of instruction given in most private schools, it was generally assumed that the share of the government institutions in the total enrolment should increase gradually throughout the decade. However, at the pre-first level, where the government attached very little priority, the past trend was allowed to continue, with the fastest rate of growth taking place in private enrolments and the slowest in local government enrolment

At the first level, private enrolments made up 10.9 per cent of lower cycle and 38.3 per cent of upper cycle enrolments in 1969. The proportion of private enrolments in the total had been increasing over the last decade (largely because the repetition rates in private schools were less improved), while the proportion of private upper-cycle enrolments in the total had decreased quite markedly due to the rapid expansion of government upper-cycle places. On the basis of the past trends it was decided that upper-cycle intakes into P5 should increase at about 2 per cent per annum throughout the period, while lower-cycle private intakes should increase at the same rate until 1976 and thereafter stabilize. A very considerable reduction in private wastage rates was also assumed. These projections (detailed in Table 39 in Appendix I) entailed an increase in the share of private lower-cycle first-level pupils to 11.4 per cent of the total in 1980, and a rapid fall in the share of private upper-cycle enrolments to only 15.1 per cent of the total in the same year.

In municipal areas (where most private schools are situated) there was some evidence to show that an increasing number of children were unable to find lower-cycle first-level school places. In addition it is known that municipal populations are growing very much faster than the over-all average population. Thus it was decided that P1 intakes would need to grow at about 7 per cent per annum. As the municipal schools in general are relatively efficient, only slight improvements in the progression rates were assumed. In the upper cycle considerable numbers of children in municipal areas go to private or Ministry of Education

schools and a progression rate of only 56 per cent from P4/P5 in municipal schools in 1980 was assumed (lower than the national average since the progression rate in private schools is much higher than the national average and in Ministry of Education schools is about 300 per cent).

The Ministry of Education's first-level schools are supposed to be demonstration and experimental schools. With current enrolments in 1972 at around 80,000 in the lower cycle and 164,000 in the upper cycle, they are already extensive enough for any conceivable demonstrative or experimental purposes. Thus our projections involve only a very slight expansion of intakes at both levels. As the quality of instruction in Ministry of Education schools is much higher than that in any other part of the first level, the progression rates are already high and are not likely to change very much over the period.

The projections for the local authority schools were made in two ways. Firstly, from the total enrolment the projected private, municipal and Ministry of Education enrolments were subtracted and the remainder was assumed to be the part to be met by the local authority schools. Secondly, separate projections were made for each of the 71 *changwads* in the country, each having its own population, drop-out, repeater and progression rate assumptions. This second projection method was designed to produce approximately the same result as the first method and, fortunately, it did.

A summary of the projection for all levels is given in Table 35.

TABLE 35. Actual and projected enrolment in public and private schools

	Actual		Projected	
	1966	1971	1976	1980
First level (Total)	4 800 001	5 657 267	7 259 000	8 565 000
Second level (Total)	392 734	662 685	1 030 686	1 407 780
MS1-3	285 338	507 056	798 000	1 124 000
MS4-5	49 589	64 903	111 000	145 400
MS1-6 (vocational)	42 077	55 358	76 506	88 220
Teacher training	15 730	35 368	45 180	50 160
Third level (Total)	42 443	82 364	127 982	161 690
University	28 235	50 166	67 050	89 500
Teacher training	8 938	18 208	36 775	41 590
Technical	5 270	13 990	24 157	30 600
TOTAL (all levels)	5 235 178	6 402 316	8 417 668	10 134 470

TEACHER TRAINING

The part of the system where it was felt that the most detailed and accurate projections were needed was teacher training. In Thailand the success or failure of an educational plan, project or innovation is far more dependent on the teacher

than on any other factor. Unless a sufficient number of teachers with the required qualifications are available, it is likely that all other planning activities will be of only very limited value. A teacher supply/demand balance sheet by qualification was created.

The demand for teachers was calculated as follows. Firstly, past pupil/teacher ratios, class/teacher ratios and teacher qualification structures were worked out for each level and type of education separately. On the basis of the past levels of these variables, qualitative improvement proposals, various accepted norms and, of course, the question of feasibility, the future pupil/teacher and class/teacher ratios were assumed. Using these figures the total number of teachers required for each level and type of education was calculated. Secondly, on the basis of past qualification structures and the desirable and feasible future configuration, assumptions were made about the qualification structure for each year from 1972 to 1980 and for each type of education. Applying these qualification structures to the total teacher requirements, the total stock of teachers needed by qualification was calculated (see Table 36 on page 108). Thirdly, past attrition rates for each grade of teacher were calculated and on this basis future attrition rates due to death or retirement were estimated as shown in Table 37.

TABLE 37. Past and projected attrition rates of teachers due to death and retirement by qualification (per cent per annum)

	1964	1965	1966	1967	Projected 1970-80
Bachelor and above	4.5	5.0	4.8	6.8	5.0
Higher certificate and equiv.	3.8	4.3	4.1	4.8	5.0
Lower certificate and equiv.	4.3	3.7	3.2	3.1	3.5
Others	8.2	8.2	7.0	6.6	6.0

With these attrition rates, the number and particular qualification of teachers dropping out of the teaching force for any one year could be calculated and this wastage added to the required increase in the stock of teachers to give the total net requirements (see Table 38).

Having calculated the total net requirements for each level, the next task was to calculate what enrolments would be needed to produce these requirements. The first step was to work out how many of the teachers at each qualification would be produced outside the formal teacher-education system; for example, through normal upgrading processes, from universities, from specialized vocational, technical or physical education teacher training. These enrolments were calculated separately and subtracted from the net requirements. Then, starting with Bachelor of Education training, the enrolments of both full- and part-time teacher trainees were calculated, taking account of a desirable relationship between full- and part-time training, drop-out, repetition and failure rates, as well as an estimate of the proportion of newly qualified teachers who will actually take up

TABLE 36. Total stock of teachers

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Bachelor & above	17 300	20 990	24 090	27 020	30 390	34 490	38 320	42 050	46 260	50 530
Higher certificate and equiv.	44 500	49 000	52 590	56 250	60 360	65 100	70 760	76 460	82 250	87 990
Lower certificate and equiv.	117 400	123 750	128 780	133 540	138 800	144 980	153 350	162 490	171 090	179 280
Other	42 200	41 760	41 440	42 990	44 450	45 730	44 670	44 200	43 500	42 800
TOTAL	221 400	235 500	246 900	259 800	274 000	290 300	307 100	325 200	343 100	360 600

TABLE 38. Net requirements of teachers, including wastage

	1971 for '72	1972 for '73	1973 for '74	1974 for '75	1975 for '76	1976 for '77	1977 for '78	1978 for '79	1979 for '80
Bachelor & above	4 560	4 150	4 130	4 720	5 620	5 560	5 650	6 310	6 580
Higher certificate and equiv.	6 730	6 040	6 290	6 920	7 760	8 920	9 240	9 610	9 850
Lower certificate and equiv.	10 460	9 360	9 270	9 930	11 040	13 440	14 510	14 290	14 180
TOTAL QUALIFIED	21 750	19 550	19 690	21 570	24 420	27 920	29 400	30 210	30 610
(Unqualified)	(2 090)	(2 190)	(4 040)	(4 040)	(3 950)	(1 680)	(2 210)	(1 950)	(1 910)

teaching. The calculations of desirable enrolments for lower and higher certificates were calculated in almost exactly the same way, except that an allowance had to be made for those who are promoted to the next higher level of teacher education and those who fail at the higher level subtracted from the net requirements. The final results of all these calculations are shown in Table 40 in Appendix I. The figures for 1972-76 were those included in the plan, since they usually produced a reasonable supply/demand balance. However, the planned intake into full-time certificate training in 1976 does seem on the high side and the figures coming out of the calculations explained above are shown in brackets. It can be seen from this table that teacher training enrolments do not have to grow at a particularly rapid rate in order to satisfy the demand. This is because of the very rapid expansion that took place during 1968-71.

We have not gone into great detail in explaining the methodology for it is not the objective of this study to explain in detail all the techniques of quantitative planning used in Thailand. However, for the reader who is interested in more details of the methodologies used, we have included in Appendix II a set of equations designed to explain more precisely exactly how the enrolment figures were arrived at.

In this brief description we have attempted to give the reader some idea of the way in which the basic enrolment projections were calculated so that some judgement as to their validity and plausibility can be made. The full results are shown in Table 41 in Appendix I.

2. Six-year first-level education alternative

With the present structure of the educational system, it will be a very long time before compulsory first-level education is achieved. Our calculations show that, depending on what priority the government attaches to universal first-level education, it will take a minimum of twenty years for Thailand to reach compulsory upper and lower first-level education and probably something much nearer fifty or sixty years.

Research shows that four years of education is insufficient to make a child from a non-literate environment permanently literate; a large proportion of children who complete only lower first-level education in Thailand have lapsed into illiteracy within three years of leaving school. There is, therefore, a considerable degree of interest in Thailand in changing the structure of the educational system so that the majority of children attend school for more than four years within the foreseeable future.

In comparing the first-level education system in Thailand with the situation in other Asian countries two differences are immediately apparent. Firstly, in virtually every other Asian country the first-level school course is six years and not the seven years that exists in Thailand. Secondly, schools in Thailand operate for a considerably smaller proportion of the year than in any other Asian country; the school is officially in operation for only 180 days of the year (in actual fact,

taking account of public holidays, the time the teachers spend getting their salaries, examinations and other factors, the Thai first-level school is only in operation for an average of about 140 days per year), while in other countries in Asia the school year runs between 190 and 240 days, with the median being between 210 and 220 days per year.

It would seem possible for Thailand to increase the days taught per year by about one-sixth to 210, and decrease the number of years of the first-level course by one-seventh to six years. If this were done, it would not only be possible to cover the same curriculum in a shorter time and lower cost, but the Thai educational system would be more in line with those of its neighbours. Of course, it might well be possible through qualitative changes to reduce the number of years of the first-level course without increasing the school year, and still cover the same curriculum.

Whatever solution is chosen it is still true that if the number of years of the first-level course were reduced, compulsory near-universal first-level education could be achieved by 1980. In this way it is more likely that resources devoted to lower-cycle first-level education might produce considerably more positive returns than they do at the moment.

We therefore projected first-level enrolments through to 1980 on the following assumptions: firstly, there could be no change in the planned enrolments through to 1976 (although there could be change in the distribution by grade); secondly, the change-over to a six-year system could be completed by 1977; and, thirdly, by 1980 the intake into P5 will be equal to 98 per cent of the 11-year-old population in that year.

With a change in the structure of the system there are obviously a large number of problems that will have to be solved. However, in this study, which concentrates on the costs and financing of the system, we will discuss only those problems which have a significant cost implication and will not spend time on explaining the curricular, administrative and organizational aspects, which have only slight cost implications.

Firstly, there is the problem of the radically reduced opportunity for second-level education that children in P6 and P7 will have in the changeover year. If nothing is done to mitigate this reduction in opportunity, the children in the terminal grades in the changeover year will have approximately half the normal chance of progression to a second-level school.

Secondly, as it is intended that a seven year's curriculum be fitted into six years of education, curriculum change will have to start taking place well before the changeover is completed, otherwise children completing P6 will not be able to compete with children terminating their education in P7.

Thirdly, if there is to be a significant curriculum change it will be necessary to retrain the teachers involved in this change, so that they can teach effectively in the new system.

For the projections, the following additional assumptions were made. In order to strengthen the chances of further education for children in the terminal grades, it was decided to stagger the changeover, with half the schools in the country

changing in one year and the remainder in the following year. This is illustrated in Table 39.

TABLE 39. Phasing the changeover from a seven-year first-level system to a six-year system

	Grades covered									
	1973		1974		1975		1976		1977	
	6 yr. curr.	7 yr. curr.	6 yr. curr.	7 yr. curr.	6 yr. curr.	7 yr. curr.	6 yr. curr.	7 yr. curr.	6 yr. curr.	7 yr. curr.
First 50% of schools	P1-3	P4-7	P1-4	P5-7	P1-5	P6-7	P1-6	P7	P1-6	
Second 50% of schools	—	P1-7	P1-3	P4-7	P1-4	P5-7	P1-5	P6-7	P1-6	P7

From this table it can be seen that in 1976 a normal P7 enrolment will be leaving school, plus 50 per cent of a nomal P6 enrolment, and in 1977 a normal P6 enrolment. After 1976 P7 will not exist in half the schools in the country, and after 1977 there will be no more P7 at all. However, even with this system the chances of second-level places for the children who graduate in either 1976 or 1977 are still reduced by about one-third, and thus a further sophistication is needed.

It was decided that, for the first few years after the changeover, considerable repetition in P6 would be allowed to even out the progression possibilities. It was assumed that 10 per cent of pupils in P6 at the changeover year would be allowed to repeat, and 5 per cent would be allowed to repeat in the following year. However, despite all these efforts to prevent discrimination against children born in any one year, there is still an inevitable fall in progression rates from P6 and P7 to MS1, from 77.3 per cent in 1975/76, to 50.5 per cent in 1976/77, to 41.5 per cent in 1977/78 and to about 40 per cent thereafter. This decline is inevitable because the purpose of changing the system is to increase the opportunities at the upper first level dramatically and no commensurate expansion of second-level education is posited in this alternative. In many respects the change can be seen as moving a barrier from P4 to P6.

As was mentioned above, for the first P6 classes to graduate in 1976 it will be necessary to introduce a new accelerated curriculum into some schools from 1973. It would be desirable for all teachers to receive some in-service training before the new curriculum is introduced. It is assumed, therefore, that all teachers will attend a six-week course in the long summer vacation before their particular class changes over to the new curriculum. It has been calculated that 60,000 teachers would require retraining in 1972/73, 75,000 in 1973/74, 30,000 in 1974/75, 25,000 in 1975/76 and 20,000 in 1976/77. Unfortunately the capacity of the teacher-training colleges is not sufficient and there will be some shortfall in training, as is shown in Table 40.

TABLE 40. In-service training requirements for changing the first-level system

	1972 for '73	1973 for '74	1974 for '75	1975 for '76	1976 for '77
Requirements	60 000	75 000	30 000	25 000	20 000
Capacity actual training	50 000	55 000	60 600	25 000	20 000
Shortfall	10 000	20 000	—	—	—

In distributing the total enrolments in the new six-year first-level system one further problem had to be faced. Without any further increase in enrolments, there would be an increase in P5 of approximately 50 per cent. By 1976 there is

TABLE 41. Upper-cycle first-level six-year compulsory education alternative

	Grade	1976	1980
All education	P5	612 650	1 334 000
	P6	507 700	1 171 000
	P7	435 290	—
	P5-7	1 555 640	2 505 000
	Kindergarten-P7	7 448 040	8 981 000
Ministry of Education	P5	60 440	98 000
	P6	60 200	94 000
	P7	60 080	—
	P5-7	180 720	192 000
	Kindergarten-P7	292 820	314 900
Municipalities	P5	27 610	56 000
	P6	25 640	54 000
	P7	23 740	—
	P5-7	76 990	110 000
	Kindergarten-P7	385 290	520 000
Local authority	P5	407 620	1 026 000
	P6	314 770	866 000
	P7	250 050	—
	P5-7	972 440	1 392 000
	Kindergarten-P7	5 653 600	6 913 100
Private	P5	116 980	159 000
	P6	107 090	157 000
	P7	111 400	—
	P5-7	335 470	316 000
	Kindergarten-P7	1 116 360	1 233 000

already likely to be an 80 per cent progression from P4 to P5 in urban areas and there would be enough places for only a further 25 per cent increase in intakes. It was therefore assumed that municipal and private schools (operating mainly in urban areas) could increase their intakes into P5 by only 25 per cent. Thus the P5-P6 enrolment with a six-year first-level system would be lower than P5-P7 under the old seven-year system. No change in total P5-P7 enrolments (now P5-P6) was assumed with Ministry of Education schools. Thus the local authority schools must cater for all the increases in enrolments entailed by the changeover and also for the slight fall in enrolments in urban private and municipal schools. A few further minor sophistications were introduced to produce the enrolment projections shown in Table 41.

Finally, it should be noted that considerable research is taking place in Thailand at the moment to identify both the problems and advantages involved in such a changeover. Quite obviously any change of any kind will involve problems, but this in itself is not particularly significant. What is important is whether the advantages to be gained are sufficiently large to offset the inevitable problems. We are convinced that the advantages of achieving compulsory universal first-level education by 1980 are very great.

3. Eighty per cent progression P7/MS1 alternative

A large number of people in Thailand feel that the priority area for educational expansion is not so much the first level as the second (as long as the curriculum can be made relevant to the lives of the mass of the population). Because of the relatively rapid expansion that has taken place in P5-7 enrolments in recent years, the progression rate from P7 to MS1 has fallen from its level of more than 85 per cent during the 1960s to around 80 per cent at present, and it will fall further according to the plan figures (the basic projection is to 77.3 per cent in 1975/76 and 66.5 per cent in 1979/80). Many educators would like to maintain this progression rate at about 80 per cent. The implications of keeping the progression rate at that level were calculated making no other changes to the basic alternative.

The repeater, drop-out and progression rates used in the basic projection were not expected to change and this new alternative was relatively easy to project as the only factor assumed to change was the intake into MS1 which had to be increased in order to maintain the progression rate at 80 per cent.

In the basic projection the most rapid possible expansion of private second-level enrolments had been assumed. It was decided, therefore, that all these extra second-level enrolments (10,360 in 1976; 34,000 in 1977; 69,000 in 1978; 123,000 in 1979; 181,000 in 1980) would have to be in public second-level schools. It should be added that the results of this projection (as shown in Table 42) involved a fall in the progression from MS3 to MS4, for if a barrier is removed from one part of the system it has to be replaced somewhere else.

TABLE 42. Eighty per cent progression P7/MS1 alternative

	Grade	1976	1980
All education	MS1	308 000	509 000
	MS2	264 060	434 000
	MS3	236 500	362 000
	MS1-3	808 560	1 305 000
Government	MS1	207 000	382 000
	MS2	173 060	321 000
	MS3	153 500	261 000
	MS1-3	533 560	964 000
Private	MS1	101 000	127 000
	MS2	91 000	113 000
	MS3	83 000	101 000
	MS1-3	275 000	341 000

4. Six-year first-level plus improved second-level alternative

One of the major problems of the six-year first-level alternative by itself is the low progression from the first to the second level. Two alternatives were studied, each attempting to deal with this problem in a different way. The first alternative assumed that the maximum conceivable conventional expansion of second-level education is that shown in Table 42. The other possibility, involving a change in the utilization of second-level school teachers and facilities, is shown in section 5 below.

In this alternative there is merely the addition of the enrolment figures for first-level education under the six-year scheme (Table 41) and the second-level enrolments in the 80 per cent progression from P7/MS1 alternative (Table 45). The advantage of this alternative is that the progression rate from P6 to MS1 falls to only 47.1 per cent in 1979/80 compared with the 39.2 per cent if there is no change in second-level enrolments from the basic projection.

5. Six-year first-level plus 65 per cent progression from P6 to MS1

Many educators found a 47 per cent progression rate from P6/MS1 still too low. Therefore, it was decided to work out one further alternative involving at least a 65 per cent progression P6/MS1 in 1979/80. The actual progression involved very little work as the drop-out and repeater rates in the basic projection were assumed to remain unchanged and all that needed to be altered was the intake into MS1. As with the third alternative above, it was assumed that all the extra

enrolments would have to be in government schools since the expansion of private enrolments in the basic projection was already as fast as could be expected. The results of this projection are shown in Table 43.

TABLE 43. Sixty-five per cent progression on P6/MS1 (in 1980) alternative combined with six-year first-level system

	Grade	1976	1980
All education	MS1	297 640	702 000
	MS2	264 060	599 000
	MS3	236 500	514 000
	MS1-3	798 200	1 315 000
Government	MS1	196 640	575 000
	MS2	173 060	486 000
	MS3	153 500	413 000
	MS1-3	523 200	1 474 000
Private	MS1	101 000	127 000
	MS2	91 000	113 000
	MS3	83 000	101 000
	MS1-3	275 000	341 000

One further complication was introduced, for it seemed beyond the financial ability of the country to change over to a six-year first-level system (involving considerable enrolment increases) and to increase the basic alternative by 691,000 MS1-3 pupils in 1980 (an increase of 88 per cent) both at the same time. It was decided to assume that this particular alternative could occur only if all (or virtually all) the extra second-level enrolments were in a second shift in existing schools. In this way the extra expansion would take place at very little capital cost and at a lower-than-normal recurrent unit cost.

6. Conclusions on alternatives

Obviously there are an infinite number of alternatives that are at least theoretically possible and the enrolment implications of a few feasible alternatives which express the emphasis that different Thai educational leaders might place on future enrolment expansion were worked out.

Under any financial assumption, Thailand is still a long way from nine, ten, or more, years of universal education. If the progression rate is to be dramatically increased between P4 and P5, given the present significant drop-out at this level, then the progression rate *must fall* between some other levels of the system. The same, of course, applies with an increase in the progression rate between

P6 or P7 and MS1. Thus, in the short term, if a significant improvement is made in the progression rate between two levels, there will have to be a fall in the progression rate between some other levels. This fact is demonstrated very clearly in Table 44.

The results of all the alternative projections are shown in Tables 41-43 and some analyses of progression rates and enrolment ratios in Tables 44 and 45.

TABLE 44. Gross progression rates for alternative enrolment projections (percentage)

	Grade	1972/73	1979/80
Basic alternative	P4/P5	44.3	63.0
	P7/MS1	80.5	66.5
	MS3/MS4 + equiv. T.T.	64.2	49.4
Six-year first level	P4/P5		96.5
	P6 and P7/MS1		39.2
Improved second level	Bas. alt. P7/MS1		80.0
	MS3/MS4 + equiv.		45.8
	Six-year P6 and P7/MS3		47.1
Improved second level with six-year first level	P6 and P7/MS1		65.0
	MS3/MS4 + equiv.		35.7

TABLE 45. Full-time enrolment ratios for alternative enrolment proposals

	Grade	1972	1980
Basic alternative	P1-7	117.7	114.8
	P5-7	36.2	65.3
	MS1-3	21.6	34.4
	MS4-5	9.7	12.5
	Third level	3.7	5.3
Six-year first level	P1-4	117.7	114.8
	P5-6	36.2	102.4
	MS1-3	21.6	33.3
	MS4-5	9.7	12.0
	Third level	3.7	5.1
Improved second level	P1-4	117.7	114.8
	P5-7	36.2	65.3
	MS1-3	21.6	40.0
	MS4-5	9.7	12.5
	Third level	3.7	5.3
Improved second level with six-year first level	P1-4	117.7	114.8
	P5-6	36.2	102.4
	MS1-3	21.6	53.8
	MS4-5	9.7	12.0
	Third level	3.7	5.1

There is one other factor which we have not taken account of in the alternative enrolment projections, and that is the different teacher-training enrolments that these would entail. Since the extra teacher requirements never came to more than 5 per cent of the stock of teachers in the basic alternative and as the original teacher projections involved a safety margin surplus (the estimated proportion of newly qualified teachers not taking up teaching) of about 10 per cent, it was not felt absolutely essential (although it would have been desirable) to spend a great deal of time and effort on recalculating the teacher-training enrolments. There would have been only a marginal effect on the total financial requirements of the system.

B. Economic development during the 1970s

As was mentioned in the introduction to this part of the study, we do not intend to make any sophisticated economic or econometric projections. Whereas in our day-to-day work we are intimately involved in problems of costs and financing of education, our interest and involvement in the economy is much more cursory. In addition, after carefully studying the economic framework of the third five-year plan, the conclusion was reached (and shared by a large advisory team from the World Bank) that there were no large inconsistencies in the macro-framework and that the development envisaged was at least feasible, even when the inevitable US military withdrawal was taken into consideration.

In the first part of this paper it was shown that, despite several serious economic problems, the Thai economy grew rapidly throughout the 1960s and only during the last couple of years has a slowdown in the growth rate become obvious. However, even though the economy had been growing rapidly during the first and second plans, not very much progress was made in solving some of the major problems. Agricultural production and exports grew only slowly and, as the vast majority of export earnings came from the sale of agricultural products, the balance of trade worsened throughout the decade. Of course the rapid increase of imports, particularly of equipment and luxury consumer goods, was also partially responsible for the weakening balance of trade position, and the fall in US military expenditures responsible for the worsening balance of payments. These factors made urgent structural changes necessary in the balance of trade, the first step being taken with the large import duty increases in 1970. We also drew attention to the slow rate of increase of government revenues compared with the rapid expansion in government expenditures. This has led to larger and larger budget deficits, and a current level which cannot be maintained for long.

On the human side, population was growing at such a rapid rate that it was difficult to ensure that the rural majority of the population was improving its standard of living. In fact it would probably be true to say that most of the benefits of economic growth went to a small urban minority. In addition, the supply of high- and middle-level manpower was increasing so rapidly and the migration to the towns (particularly to Bangkok/Thonburi) taking place at such

a rate that urban and educated unemployment was beginning to cause some problems.

Finally with the deteriorating security situation in neighbouring countries, insurgency was becoming an increasingly severe problem. Not only were defence expenditures increasing at a rapid rate (and likely to increase further), but the absolute necessity of making a significant impact on the development of the more remote areas was becoming increasingly important.

1. The third five-year plan, 1971-76

The economic planners responsible for preparing the macro-framework of the third plan were well aware of the problems outlined in the first part of this paper, and the majority of the policies and strategies were designed to alleviate and solve to a certain degree the most serious structural imbalances in the economy.

A less ambitious growth target was set than the achievement of the two previous plans. Only a 7 per cent per annum growth in GDP was aimed for, with the economy growing slightly less rapidly than this over-all average figure during the first years of the plan, and slightly faster during the later years. However, as the rate of population growth was planned to decrease to 2.5 per cent per annum by 1976, GDP *per capita* (in constant prices) would be increasing at over 4.5 per cent per annum, faster than the over-all achievement during the second plan.

After this growth target, the second major objective was to maintain economic stability, especially in the level of prices, and to maintain equilibrium between production and market demand.

In order to achieve these two crucial objectives the plan also envisaged improving the economic structure and, at the same time, increasing social equity. These would be accomplished by emphasizing agricultural development and the expansion of public services in the rural areas; by providing increasing employment opportunities both in rural and urban areas; and by increasing social justice through the elaboration of regional and social development strategies.

Finally, the third major target was to achieve balance of payments equilibrium so that foreign exchange reserves could be maintained at a desirable and necessary level. This will be attained: by encouraging the pattern of agricultural production to favour crops with a brighter export future than either rice or rubber; by encouraging the expansion of export-oriented manufacturing industries; by expanding import substitution industries and by decreasing the imports of luxury goods.

Table 46 shows how GDP is likely to increase over the plan period. In order to achieve the high agricultural growth target, on which the achievement of most other objectives depends, increased production will have to be concentrated on crops with a high and growing demand. With some of these crops, such as maize, sorghum, tapioca and seed oil, production is likely to increase with relatively few problems; with others, such as soyabean, livestock and tobacco, considerable government inputs will be required if the production targets are to be met.

TABLE 46. Gross domestic production targets (millions of baht, 1962 prices)

Sectors	1971 estimate		% increase p. a. 1971-76	1976		% increase p. a. 1976-80	1980	
	GDP	% dist.		GDP	% dist.		GDP	% dist.
Agriculture	37 300	29.5	5.1	47 760	26.82	5.0	58 200	24.78
Mining & quarrying	2 100	1.7	6.0	2 812	1.58	6.0	3 500	1.49
Manufacturing	21 400	16.9	8.0	31 370	17.61	9.0	44 300	18.86
Construction	8 400	6.6	6.5	11 692	6.57	6.5	15 100	6.43
Electricity & water	1 900	1.5	15.0	3 887	2.18	15.0	6 800	2.89
Trans. & communication	8 600	6.8	6.0	11 534	6.48	6.0	14 500	6.17
Wholesale & retail	20 500	16.2	7.0	29 285	16.44	7.0	38 400	16.35
Banking, insurance, etc.	5 100	4.1	15.0	11 000	6.18	12.0	17 300	7.36
Ownership of dwelling	2 400	1.9	2.5	2 672	1.50	2.5	3 000	1.28
Public adm. & defense	5 700	4.5	6.0	7 611	4.27	6.0	9 600	4.09
Services	13 000	10.3	7.0	18 466	10.37	7.0	24 200	10.30
TOTAL	126 400	100.00	7.0	178 089	100.00	7.2	234 900	100.00
GDP at constant 1971 prices	141 200			199 000			262 400	

Industrial production will increase at a slightly slower rate than during the second plan, with considerably less investment, until the excess capacities already available are used up. Attention will also be paid to reducing the imports of raw materials (which during the second plan grew very much faster than exports). Available government incentives will be concentrated on export industries. Energy production will continue to expand at a very rapid rate and efforts will be made to accelerate the extension of the electricity distribution network into the rural areas.

During the later part of the second plan, construction industry outputs were increasing at only 4.6 per cent due to the reduction in US military expenditures. Efforts will be made to redirect the capacity of the construction industry to more socially productive fields of activity. However, with such a redirection, a rapid growth in construction cannot be expected.

The transport network is relatively well-developed and a rapid increase in that sector's contribution to GDP is not essential during the next few years. The same is true of the wholesale and retail trade sector where the average growth of GDP (7 per cent per annum) will be sufficient. The rate of growth of modern financial institutions is likely to be much faster since they must expand their activities into the rural areas if the agricultural production targets are to be met.

Exports are to be increased; in the long run it will be crucial to move away from the dependence on agricultural exports. One of the main areas of industrial

promotion will be to increase manufactured goods exports to make up over 12 per cent of total merchandise exports by 1976. It is also anticipated that tourism will expand at a very rapid rate and the increased earnings from this sector will largely offset the decrease in US military expenditures. The over-all balance of payments projection is shown in Table 47.

TABLE 47. Balance of payments (millions of baht)

Items	1970	Annual growth rate	1976	Annual growth rate	1980
Merchandise					
Exports	14 256	7.9	22 500	7.0	29 500
Imports	−26 514	2.3	−30 300	2.8	−33 800
Trade balance	−12 258		−7 800		−4 300
Services					
Exports	10 100	−7.1	6 680	10.0	9 800
Imports	−4 059	6.9	−6 050	10.1	−8 900
Service balance	6 041		630		900
Current account	−6 217		−7 170		−3 400
Unrequisited transfers (net)	1 012	2.4	1 270	4.3	1 500
Capital movements	2 106	12.6	4 300	−2.5	3 900
Allocation of special drawing rights			300		300
Net errors and omissions	447		800		800
OVER-ALL BALANCE	−2 652		−500		3 100

In total, through a policy of government assistance for crucial crops and industries, which can either replace imports or increase exports, and through both direct and indirect taxation reforms designed to slow down the growth of consumption of high and middle income groups (who have the highest marginal propensity to import) it is hoped to reduce the balance of trade deficit by almost 80 per cent. In this way the balance of payments deficit can be reduced from 2.6 billion baht in 1971 to only 0.5 billion baht in 1976 (Table 47).

The maintenance of economic stability is one of the main objectives of the plan. Through the imposition of fiscal and monetary measures, the rate of increase in gross domestic expenditures (GDE) will be kept down to 7.5 per cent per annum at constant prices. Table 48 shows the planned evolution of GDE. It can be seen that government investment will grow faster than any other type of expenditure at 8.5 per cent per annum and that government consumption is planned to increase at only 6.1 per cent per annum, compared with 14.8 per cent per annum during the second-plan period. Private consumption and investment are expected

to grow slightly faster than GDP. Total exports will grow at 4.4 per cent per annum, while total imports will be restricted to 3.3 per cent per annum growth rate.

Because of the difficult security position, non-development expenditures are likely to increase faster than development expenditure over the plan period. The former are planned to increase at 8.5 per cent per annum and the latter at 7.6 per cent per annum.

During the past there has been a rather large shortfall of actual expenditure compared with budgeted expenditures. During the first and second plan this under-expenditure has been decreasing until in 1970 it amounted to about 8 per cent of total budgeted expenditures. Through an improvement of the planning process and a streamlining of the budgeting process, it is hoped that this shortfall will decrease further to 6 per cent by 1976. Whereas in 1970 budgeted expenditure was 20.3 per cent of GDP at current prices and actual expenditure 18.8 per cent of GDP, by 1976 the equivalent figures will be 19.9 per cent and 18.7 per cent of GDP at 1971 constant prices.

TABLE 48. Gross domestic expenditure (millions of baht)

Items	1970	% increase p. a. 1972-76	1976	% increase p. a. 1976-80	1980
Public sector	26 900	7.0	40 200	7.1	52 800
Consumption	16 900	6.1	24 700	6.1	31 300
Investment	10 000	8.5	15 500	8.5	21 500
Private sector	114 400	7.2	170 900	7.2	225 100
Consumption	93 900	7.1	140 400	7.1	184 700
Investment	20 500	7.3	30 500	7.3	40 400
Foreign sector	−7 200	—	−5 300	—	−3 400
Exports	22 100	4.4	28 700	8.2	39 300
Imports	−29 300	3.3	−34 000	5.9	−42 700
GDE	134 100	7.5	205 800	7.6	274 500
Marginal propensity to consume		0.757[1]		0.741	

1. For the period 1970–76.

Taking account of the slow rate of growth of imports, a gradual elimination of export taxes and a slight redistribution of income from the richer to the poorer members of society, taxation revenues (assuming that the past marginal propensities will be maintained) are likely to increase in total only slightly faster than GDP, while other government revenues will increase slightly more slowly than GDP (see Table 50). In total, although government revenues will increase faster than GDP during the third plan, owing to a very slow rate of increase in revenues at the end of the second plan, by 1976 government revenues as a percentage of GDP (at 1971 prices) will be only slightly greater than they were in 1970, at 14.8

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per cent. However, because of the slow rate of growth of actual expenditures, particularly at the end of the second plan, the actual financing deficit is likely to fall from 4.7 per cent of GDP (at constant 1970 prices) in 1970 to only 4.0 per cent in 1976. For this target to be achieved, money supply will have to increase at only about 10 per cent per annum.

TABLE 49. Government expenditure (millions of baht)

	1970		% increase p. a. 1971–76	1976		% increase p. a. 1976–80	1980	
	Exp.	Dist.		Exp.	Dist.		Exp.	Dist.
Total budgeted exp.	27 300	100.0	8.1	39 660	100.0	7.9	53 800	100.0
Development exp.	...		7.6	16 660	42.0	7.5	22 250	41.3
Adm. & other exp.[1]	...		8.5	23 000	58.0	8.2	31 550	48.7
Actual exp.	25 135	—	6.8[2]	37 280	—	—	51 110	—
% of total exp.	92.1	—	8.4[3]	94.0	—	—	95.0	—
% of budget exp./GDP	20.3			19.9			20.5	
% of act. exp./GDP	18.8			18.7			19.5	

1. Includes debt servicing.
2. Over the period 1970–76.
3. Estimated over the period 1972–76.

TABLE 50. Government revenue (adjusted taxation, millions of baht)

Items	1970		% increase p. a. 1972–76	1976		% increase p. a. 1976–80	1980	
	Rev.	Dist.		Rev.	Dist.		Rev.	Dist.
Total revenue	18 873	100.0	7.7	29 500	100.0	7.8	39 840	100.0
from taxation[1]	16 792	89.0	8.0	26 700	90.5	7.8	36 100	90.6
from others	2 081	11.0	6.1	2 800	9.5	7.5	3 740	9.4
% of government revenue in GDP	14.1			14.8			15.2	

1. Excludes repayment from coin making and loan refunds.

TABLE 51. Budget deficit (millions of baht)

Items	1970	1976	1980
Total government revenues	18 873	29 500	39 840
Total actual government expenditure	25 135	37 280	51 110
Financing deficit	−6 278	−7 750	−11 270
% deficit GDP	4.7	3.9	4.3

TABLE 52. Functional government expenditure (millions of baht)

Items	1970		% increase p. a. 1972–76	1976		% increase p. a. 1976–80	1980	
	Exp.	% dist.		Exp.	% dist.		Exp.	% dist.
Administration and miscellanous	5 873	21.5	1.8	6 930	17.4	4.0	8 110	15.1
Defence	4 898	17.9	8.9	6 970	17.6	10.6	10 420	19.3
Police	1 715	6.3	10.0	2 480	6.3	9.0	3 500	6.5
Debt servicing	2 340	8.6	18.0	6 620	16.7	9.5	9 520	17.7
Other govt. development activity	8 239	30.1	3.1	9 474	23.9	6.7	12 297	22.9
Education[1]	4 235	15.5	7.7	7 186	18.1	8.5	9 953	18.5
% of educ. exp. in GDP (1970 prices)	(3.2)	—	—	(3.6)	—	—	(3.8)	—
TOTAL	27 300	100.0	8.1	39 660	100.0	7.9	53 800	100.0

1. Direct educational expenditure, not including foreign financing or expenditures of Ministry of Education used for non-educational purposes. These figures, therefore, are equivalent to those shown in Table 59.

During the plan, total government expenditures are planned to increase at an average of 8.1 per cent per annum, with the fastest rate of increase taking place in debt servicing and more than average increases in police and defence spending (although considerably slower than in recent years). All other fields of government activity will increase their expenditures more slowly than average. Education, for example, was allocated a growth in expenditure of 7.7 per cent per annum over the plan period.

Labour force participation rates are likely to fall marginally over the plan period, as can be seen from Table 53.

TABLE 53. Labour force participation rates and per cent per annum growth in the labour force, 1971-76

	Urban areas %	Rural areas %	Total %
Participation rate 1971	59.6	84.1	80.3
Participation rate 1976	58.3	83.7	79.2
Growth in labour force 1971-76	4.6 p.a.	2.7 p.a.	2.9 p.a.

A total of 2,586,000 new employment opportunities will be required if unemployment is not to increase, 2,071,000 of these in rural areas and the remaining 515,000 urban in areas. Almost 60 per cent of the new employment opportunities (mainly self-employment) will be in agriculture, 16.0 per cent in commerce, 15.6 per cent in services, with only 2.7 per cent in industry and 1.6 per cent in construction. In fact, despite a faster rate of increase in manufacturing output

than in over-all GDP, its share of total employment will fall from 4.2 per cent in 1971 to 4.0 per cent in 1976. It is only the rapid expansion of employment in the services sector that will prevent there being considerable unemployment in urban areas during the plan period. Even so it is estimated that, unless considerable efforts are made to increase the use of labour-intensive methods of production, there is likely to be an increase of urban unemployment by about 80,000 over the plan period, or by 3.2 per cent of the urban labour force in 1976.

Although no manpower projections have been made which are useful for educational planning purposes the increase in employment expected has been broken down by major ILO occupational groups. This is shown in Table 54.

TABLE 54. Additional manpower requirements by major occupational group

	Increase in requirements 1971–76 (thousands)	% distribution
Professional and technical	78	3.0
Administrative executive and managerial	30	1.2
Clerical	69	2.7
Sales	450	17.4
Farmers and miners	1 560	60.3
Workers in transport and communication	89	3.4
Craftsmen and labourers	213	8.2
Service workers	97	3.8
TOTAL	2 586	100.0

From studies of particular occupations carried out both by the NEDB and the authors, it appears that there is likely to be a shortage of most types of medical manpower, a shortage of scientific technical manpower, a surplus of engineering graduates and technicians and a surplus of agricultural graduates. In total, however, there seems to be a reasonable balance between the supply and demand of educated manpower as long as the past trend continues of increasingly high qualifications being needed for most occupations.

To summarize, therefore, it seems likely that some, though not all, of the problems of the economy will be well on the way to solution by the end of the third five-year plan period. The large deficit in the over-all balance of payments will be almost eliminated, considerable diversification will have taken place in agricultural production, much of the existing excess capacity in industry will have been utilized and, although unemployment in urban areas may rise slightly, it is unlikely to reach unmanageable levels.

To conclude this section one comment must be made. The macro-figures used in the plan are based on 1962 prices, while the government expenditure figures are based either on current prices or on constant 1971 prices. As there has been inflation at an average of 2.1 per cent per annum in the general price index between

1962 and 1970, there is now a very wide divergence between the GDP figures used in the plan and the real current price figures. It would have been much more realistic to base the plan on more up-to-date prices, but unfortunately no such figures were calculated by NEDB. For the purpose of making comparisons between various aspects of government revenue and GDP, we had to create our own rough estimate of GDP at constant 1971 prices. It is not stated in the plan whether government expenditures are in constant or current prices, but it seemed most likely that they are in constant 1970 or 1971 prices. We have therefore assumed that they are in constant 1971 prices.

On this assumption educational expenditures (excluding central administrative expenditures and foreign aid) financed by the government increase from 3.2 cent of GDP in 1970 to 3.6 per cent in 1976.

2. The development of the economy, 1976-80

Because of the uncertainties about the future level of US military spending, the success of the planned diversification programmes and the price levels of Thailand's major exports, the NEDB has not made any long-term perspective plan or even any macro-projections through to 1980. Therefore, we had to make our own projections for the period being studied. In making these projections the same assumptions were usually used as in the third five-year plan macro-projections.

In total it seemed that, assuming the third five-year plan would be implemented in full, GDP could grow (at constant prices) at an average of 7.2 per cent per annum over the period 1976-80, i.e. slightly faster than the average during the third plan. As the population growth rate could be expected to fall to about 2.2 per cent per annum by 1980, GDP *per capita* could be expected to rise by 5 per cent per annum in that year. This figure was arrived at by studying the growth potential of the different sectors. Apart from the agricultural, industrial and banking sectors, it was felt that the third five-year plan targets could be maintained. In agriculture it was decided to reduce the growth rate from 5.1 to 5 per cent per annum; in industry, assuming that many of the present major problems would be solved, the growth rate was increased from 8 to 9 per cent per annum; the banking and insurance sector could not expect to maintain the high growth of the third-plan period and the rate was reduced from 15 to 12 per cent per annum

Considerable change was expected in the balance of payments, leading to a more favourable balance in both the over-all and the trade accounts in 1960. It was felt that in total the over-all balance would have to move into a surplus position by 1980 to make up for the continuous deficits from 1970-76. This was possible, despite an expected fall in the growth of exports and a fall in capital movements due to an increasing debt-servicing burden, as long as the growth of imports could still be very tightly controlled. After 1976, with only negligible foreign military expenditures, it was assumed that the anticipated growth in tourism would produce a rapid growth of at least 10 per cent per annum in the export of services. In other words, it is expected that by 1976 most of the structural

problems in the balance of payments would have been solved and, as long as the government continued to impose tight controls (both fiscal and, if needed, quantitative) on imports, the balance of payments could move from deficit to surplus (see Table 47).

As far as GDE is concerned, it was assumed that, except for the foreign sector, the pattern of development of the third five-year plan would be continued, giving a total average increase of 7.6 per cent per annum. It was expected that the marginal propensity to consume would fall from about 0.76 over the period 1970-76 to 0.74 over the period 1977-80 (see Table 51).

Government revenue was calculated to increase at almost the same rate as during the third five-year plan, with taxation revenue growing slightly more slowly and other revenues slightly faster than before. As a percentage of GDP (at constant 1971 prices), government revenue increased from 14.8 per cent in 1976 to 15.2 per cent in 1980. With imports growing very slowly and redistribution efforts continuing, it was not expected that much more than 15 per cent of GDP could be collected by the government in one way or another without a complete change in the taxation system. The revenue projections are based on a continuation of past propensities.

In order that the budget deficit should not increase when compared with GDP, total budget expenditures would have to grow slightly more slowly than during the third five-year plan period (7.9 compared with 8.1 per cent per annum). It was expected, however, that an increasing proportion of budgeted expenditures would in fact be spent, rising from 92 per cent in 1970 to 94 per cent in 1976 and to 95 per cent in 1980. Thus actual expenditures would increase by 8.2 per cent per annum over the period 1976-80, compared with an estimated 8.4 per cent during 1972-76. In total, the actual budget deficit as a percentage of GDP (in constant 1971 prices) was expected to grow from 3.9 per cent in 1976 to 4.3 per cent in 1980. This was considered as high as was healthy for the economy.

It is virtually impossible to make any meaningful functional analysis of government expenditures for 1980 as there are such a large number of uncontrollable variables to be taken into account. In order to provide the financing study with some framework, however, it was necessary to make some projections. We assumed, therefore, that security expenditures, at least for the army, would have to grow faster than during the third plan (as there would be likely to be less direct US military assistance); administrative expenditures could not be held down to their low rate of growth during the third plan and they are expected to grow at 1.8 per cent per annum during the third plan and at 4.0 per cent per annum during 1976-80. Debt servicing was unlikely to increase nearly as fast as during the third plan, but non-educational development activities would almost certainly be demanding a greater increase. Thus it is possible that total educational expenditures could increase slightly faster than during the third five-year plan period. The basic conclusions of these rather tentative arguments were shown in Table 52.

Two points are immediately apparent: firstly, the very large increase in the share of the debt-servicing burden; and, secondly, the very rapid fall in the share of other development expenditures caused by this increase and by the security

expenditures. It is obviously quite possible that educational expenditures will not grow as fast as posited and that the other developmental expenditures will grow faster, but the figures in Table 52 show what is considered to be the most likely growth of different types of government expenditures taking account of the government's present priorities and all other available and relevant data.

The total labour force is likely to grow at roughly the same rate as it did over the third five-year plan period, but an even faster increase in the urban labour force could be expected owing to more rapid migration to the towns. An increased migration is expected: partly because it is likely that land shortages will appear in certain parts of the country; partly because it is possible that there will be little improvement in the security position; and partly because of the increased aspirations of the population due to wider educational opportunity and the spread of the mass media. Thus, it is anticipated that one of the most serious problems that will have to be coped with towards the end of the decade will be increasing urban unemployment.

Although it is impossible without a detailed special study to make any definitive prognosis of the future manpower supply and demand position in 1980, it would seem likely that most categories of high- and middle-level manpower (except perhaps medical manpower and certain categories of specialist technical manpower) will be in a theoretical surplus. We say 'theoretical' for employers might upgrade the qualifications required for particular occupations.

If all our assumptions and projections prove to be a reasonable forecast of the future development of the economy, then it is likely that central government expenditures on education (excluding foreign aid, and central administrative expenditures) will increase from their present level of about 3.2 per cent of GDP to 3.8 per cent by 1980. The assumptions have been consistently optimistic as far as education is concerned and it is more than possible that educational expenditures from the central government might grow at a considerably slower rate than forecast, particularly if increasing educated unemployment becomes a fact and produces in the minds of policy-makers a certain degree of disillusionment with the educational system. There is still a belief in some circles in Thailand that by increasing educational opportunities, employment opportunities will also be increased. This is obviously not the case and all that in fact happens in the short run is that uneducated or poorly-educated people lose their jobs to more highly educated people. This can certainly not go on forever as there are only a limited amount of jobs that can be substituted and substitution only moves the employment problem from one level to a lower, but just as important, level.

In order to assure the budget increases forecast it is absolutely essential that the educational system concentrate its efforts on helping to improve the standard of living of the mass of the population who are living in rural areas, and not just on educating for employment in the modern sector. Only if it proves that it is playing a crucial role in the over-all development of the economy and in the improvement of the standard of life of the total population is it likely to get the budgetary increases forecast.

C. Projection of educational costs, 1972-80

In the previous section the likely and possible level of central government assistance for education (excluding foreign aid) was projected over the period 1972-80, taking account of the development of the economy. In this section it is intended to calculate what will be the required level of central government assistance (on the assumption that there is no change in past financing policies) so that a financing gap can be calculated by comparing the financial resources needed from the central government with those expected to be available. In the final section we will make suggestions as to how this financing gap might be closed, either by increasing the utilization of facilities or by tapping new sources of finance.

Although the methodologies used for projecting central government costs vary from level to level, certain general principles were applied. At the outset, the methodology generally used will be described and then will follow details of the projections for each alternative and for each level and type of education.

As described in Part One (page 89), past central government expenditures were analysed in order to provide recurrent unit costs and capital cost per place figures for each level and type of education. The recurrent cost figures were broken down into four parts: teacher cost, remuneration (extra allowances paid to teachers), non-teacher costs and recurrent costs of central services (supervision, research, etc.). The capital costs were broken down into three parts: capital expenditures for new places; capital costs for replacement or improvement of existing facilities; and capital costs of central services.

Our task was made somewhat more difficult by the fact that the Thai fiscal year (to which all budget and expenditure accounts refer) runs from October to September, while the academic year runs from May until April. The first step therefore in analysing past expenditures was to convert fiscal expenditure figures into academic years so that they could be compared directly with enrolments. Similarly, when all the calculations were completed the required expenditures by academic year had to be converted back to fiscal year figures.

RECURRENT COSTS

As teacher salaries make up the largest proportion of recurrent expenditures at

all levels of education, the methodology used for calculating this item was the most sophisticated. Future teachers' salaries depend on the salary scale, the number of teachers employed by qualification and the average experience of teachers with each qualification. The future qualifications of teachers and the total number that are needed by each type and level of education were calculated in order to work out the enrolments needed at each level of teacher education. As no change in teacher salaries was assumed—even though a change in government (and thus teacher) salaries will certainly take place over the decade, its likely magnitude and implementation are unknown—it was only the experience structure that had to be calculated in order to obtain a reasonable estimate of total teachers' salaries by type and level of education. The present median experience was calculated on the basis of the existing average salary of teachers with a given qualification in a given part of the system. It was then assumed that, in general, retiring teachers would have 1.5 times the average experience of teachers with any specific qualification (we experimented with the data over the past few years and found that 1.5 gave the closest fit). It was also assumed that the total new entrants to the teaching force by qualification would enter at the lowest relevant point in the salary scale (shown in Table 37 of Appendix I) and could be considered to have zero experience. It was therefore possible to calculate the new experience structure each year and from this the average salary of the teachers for each qualification in each type of education and, finally, the total salary bill could be determined.

The remuneration cost, which is used for paying such things as housing allowances, medical benefits and other special allowances, was most likely to be directly related to the salary costs. It was assumed that the trend of the percentage of these allowances going to salaries would continue to change in the same direction and at the same rate as during the recent past.

The non-teacher costs were calculated on a unit-cost basis, with the forecast taking account of the present level compared with those in other similar parts of the educational system, their past rate of growth, the likely change in the price level (normally assumed to increase at 2 per cent per annum) and any specific policies that might affect them.

The recurrent costs of central services were calculated for each level and type of education on the basis of the past trends of increases in expenditures and the effects of specific policies.

CAPITAL COSTS

For all capital costs, both for replacement and improvement of existing facilities and for new places, an increase in the cost of construction of 3.5 per cent per annum was assumed. This is a considerably lower rate of price increase than existed in the past, but it was felt that with the decrease in US military spending, there would be some excess capacity in the construction industry. In general, the capital cost per new place was calculated either from the past levels of capital cost per place or, where standard plans existed, using the cost per place inherent

in these plans. The total capital cost was then calculated for any year by multiplying the capital cost per place by the increase in enrolments projected for the following year. The replacement capital expenditures were based, in general, on projecting the past trend in replacement expenditures. Central capital expenditures were also calculated on the basis of past trend.

Table 55 summarizes the methodologies used for the cost projections.

TABLE 55. Methodologies used for cost projections for each type and level of education

Breakdown	Methodologies
Recurrent costs	
Teachers' salaries	Calculate total teacher salaries taking account of qualification structure, experience structure and salary scale.
Remuneration	Compare with teachers' salaries, assuming past trend of change in ratio to salaries continues, taking account also of specific policies.
Non-teacher costs	Continue past trend of increase of per pupil cost, taking account of increase in prices and specific policies.
Central services	Continue past trend of increase either per pupil or total cost, taking account of any specific policies.
Capital costs	For all calculations a 3.5% p.a. increase in construction prices was assumed.
New places	Either based on the increase in enrolment and the cost per place from standard plans or the increase in enrolments and the past level of capital costs per place.
Replacement and improvement	Either based on the past trend of increase of replacement expenditures, or on a percentage of total capital expenditures.
Central services	Based on the past trend of expenditure increases.

In the following subsections we will draw attention to the most important results for each type and level of education, and for each alternative; a full description is available elsewhere.[1]

We are, of course, well aware that the methodologies used are relatively unsophisticated and take no account either of existing inequalities in the cost structure or of the existing state of utilization of teachers and facilities. However, due to lack of time and unavailability of data a more accurate methodology could not be developed. Efforts were concentrated on costing those items that made up the

1. *Projection of educational costs—third five-year plan*, Bangkok, National Educational Council and Educational Planning Division, 1971, (mimeo, 90 p.)

largest proportion of total costs, as inaccuracies in the projections of these items would be likely to lead to the greatest discrepancies in the total.

It was also realised that the projections are neither in constant nor current prices, and no allowance was made for an increase in teacher salary scales, but an allowance was made for all other items. The reason why no allowance was made for the increase in teachers' salary scales was because, being the same as ordinary civil service scales, if there were to be a change (as there must be) it would affect all government expenditures, and would therefore require an increase in the total government budget and also in government revenues; little redistribution of government revenues would be involved. In addition, unlike other price increases, salary revisions do not occur gradually each year, but take place only once every few years. The date and amount of the next increase are unknown. In any longer-term projection we would have assumed that teacher salary scales increase at the same rate as GDP *per capita*, but as this exercise is concerned with actual expenditures and their financing, that method would not have been very useful. Thus, if there are to be increases in the salary scales, the total government budget and revenue will increase (and also, of course, GDP).

Finally it should be mentioned that there are activities in the Ministry of Education which are not directly educational (in the strictest sense of the word), for example, subsidies paid to Buddhist temples. The costs of these activities have not been included. All the major headings under which the projections were made can be seen in Appendix I, Table 38.

1. First-level education

The educational cost projections for first-level education were made separately for each of the three government organizations responsible for running schools; the Ministry of Education, the municipalities and the local authorities (under the Ministry of the Interior). For the local authority and Ministry of Education schools the total cost to the government was calculated. For municipal schools the grand total cost was worked out, and it was then assumed that 75 per cent of this cost would be borne by the central government (this was roughly the proportion in the 1972 fiscal year) and the remaining 25 per cent by the municipalities from their own resources.

Salaries were calculated using the methodology described above, resulting in the average salary per teacher rising at only about 1.6 per cent per annum for each of the three systems. Such a low rate of increase, despite an improvement in the qualification structure, is caused by a rapid rate of growth in the teaching force and only a slight increase in the average experience per teacher.

A very rapid increase in the percentage of salaries added for remuneration was assumed for local government schools, as special incentives were to be introduced to encourage teachers to work in remote rural areas. With the other agencies very little change was assumed.

For non-teaching costs, an increase in unit costs barely sufficient to cover the

increase in prices was allowed for Ministry of Education and municipal schools, while a rapid rate of growth of 5 per cent per annum was assumed for local authority schools.

For capital costs there were unfortunately no standard plans for first-level schools. A large number of plans existed involving differing types and standards of construction: the cost per m^2 varying from 400 baht to 1,000 baht and the cost per place from just over 1,000 baht to just over 4,000 bant. Taking account of these plans and the past levels of expenditure per place, different cost per place figures were arrived at for the 1971 base year for the different agencies and these were planned to increase at 3.5 per cent per annum.

Table 56 shows the proportions of the recurrent and capital unit costs to be borne by the central government and the municipalities.

TABLE 56. Recurrent unit and capital costs of first-level education used in cost projections, 1971-80 (in baht)

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Recurrent costs per pupil										
Min. of education	607	590	580	580	581	586	592	601	613	630
Local authority	440	450	464	473	480	490	502	517	535	554
Municipality	573	572	565	566	563	565	570	580	590	602
Capital costs per place										
Min. of Education	2 690	2 790	2 880	2 980	3 090	3 200	3 310	3 420	3 540	3 670
Local authority	2 070	2 140	2 220	2 300	2 380	2 460	2 550	2 640	2 730	2 820
Municipality	2 070	2 140	2 220	2 300	2 380	2 460	2 550	2 640	2 730	2 820

From the table it can be seen that, as far as recurrent unit expenditures are concerned, efforts were directed towards trying to reduce the wide range in unit cost in existence at the beginning of the period.

To the total costs calculated from these unit-cost figures had to be added the cost of replacing and improving existing facilities (calculated on the basis of 20 per cent of total capital expenditures for Ministry of Education schools and 25 per cent for the other two agencies) and the cost of various special schools (for the blind and handicapped) and the cost of central services of supervision, inspection, research and evaluation. The total figures arrived at (converted back into fiscal years) are shown in Appendix I, Table 38. These figures, however, do not include the 25 per cent of the costs of municipal education expected to be financed by the municipalities themselves.

A growth in central government expenditures of 8.4 per cent per annum is involved over the period 1972-76 and 5.5 per cent per annum during 1976-80. These figures were used in calculating the total costs of all alternatives except the two involving a changeover to a six-year system.

For the six-year system the extra enrolments over and above those in the basic alternative were costed using the same capital and recurrent unit costs as the basic

alternative (all the extra enrolments were expected to be in local authority schools) and these extra costs were added to the basic figure. In addition the costs of in-service training of the teachers (necessitated by a shortening of the first-level curriculum) were also calculated, taking account not only of the extra salary that would have to be paid to teacher-training college staff, but also the *per diem* and travel expenses of the teachers undergoing in-service training.

Adding all these items together, a figure for the costs of first-level education under the six-year system was arrived at (shown in Table 46 in Appendix I). This objective of universal six-year education by 1980 involves an increase of only 8.9 per cent per annum in expenditures over the period 1972-76, and 5.9 per cent per annum over the period 1976–80.

It should be noted at this stage that, in all cases, only the difference between each alternative and the basic assumption is costed, using very rough 'rule of thumb' methods. Even though we know that a change in enrolments will alter the unit costs, this has not been considered for we are concerned only with the over-all order of magnitude of the costs of the alternatives. For this a detailed calculation of costs is not needed, and the assumption that marginal unit costs are equal to average unit costs is sufficient.

2. Second-level education

The teacher salaries for government second-level schools were calculated using the methodology described on page 130. Because of the very rapid growth in enrolments and the number of teachers employed, the average experience of teachers (both bachelor and higher certificate) was expected to fall from over 9 years in 1969 to under 5.5 years in 1976, only beginning to rise again very slowly thereafter. Thus the average teacher's salary in government second-level schools will actually fall between 1969 and 1976, which meant that, despite some increase in the non-teacher costs, total recurrent unit costs borne by the government hardly varied at all between 1971 and 1976 and began to show a significant increase only after 1976. Very little change was projected in the level of remuneration per teacher.

For the non-teaching costs it was found necessary to make separate projections for academic and comprehensive second-level schools. The non-teacher costs for comprehensive schools were planned to fall by about 40 per cent between 1971 and 1976 and thereafter remain constant, while those in ordinary second-level schools were expected to rise at 5 per cent per annum since the curriculum was planned to be gradually diversified. Central recurrent costs per pupil for supervision, inspection and research were assumed to grow at about 2 per cent per annum, equal to a normal increase in prices.

On the capital side, it was impossible to separate out replacement and improvements from the cost of facilities for new places, and all capital costs had to be related to the increase in enrolments.

There were standard costs for second-level schools, which involved a cost per place of 7,600 baht in 1970. However, as much of the expansion will occur

in existing schools at a much lower cost per place, and as the average for 1966-69 (including replacement) was only 4,200 baht, it was decided to use a figure of 7,000 baht per place (including replacement) for the base year. Table 57 shows the unit costs used in the projections.

TABLE 57. Recurrent and capital unit costs of government second-level education, 1971-80 (in baht)

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Recurrent cost per pupil	1 134	1 135	1 139	1 144	1 139	1 134	1 135	1 151	1 168	1 192
Capital cost per place (including replacement)	7 245	7 499	7 761	8 033	8 314	8 605	8 906	9 218	9 541	9 875

Using these figures and the projected enrolments, it was possible to calculate the total government budget required for academic and comprehensive second-level education. However, these total costs apply to only two of the five assumptions, and thus two further calculations needed to be made, one for an 80 per cent progression rate to MS1 from the basic alternative's P7 (combined both with the basic and the six-year first-level alternatives) and the other for the final alternative involving a 65 per cent progression from P6 to MS1 (combined with the six-year first-level system).

For the 80 per cent progression alternative the costs of the extra enrolments (all in government schools) were worked out using the figures in Table 57 and were added to the total already calculated for the basic alternative.

For a 65 per cent progression from P6 to MS1, the increase in enrolments was so large that it could not be achieved by conventional means. It was therefore decided that the extra enrolments (all in government schools) would have to be fitted into facilities already planned under the basic alternative. The costs of this alternative were projected under the supposition that all the extra enrolments would be catered for in a second shift in already-planned schools. Double shifting is no new development in Thailand, as from 1952 to 1957 most second-level schools in the central part of the country were operating on a double-shift basis and from time to time, when the pressure of enrolments becomes very high, municipal first-level schools also run second shifts. Unfortunately there were no hard data on which to base an estimate of the potential savings from a two-shift system. Nevertheless it seems likely that the recurrent unit costs of the second shift might be about 20 per cent lower than normal due to savings on certain overhead items and to a greater utilization of some specialist teachers (normally about 1.8 times more teachers would be needed for the double-shift operation of the same school). It was also estimated that only about 10 per cent of the normal capital expenditure per place would be required to make library and practical facilities viable. Thus the increase in enrolments entailed by the 65 per cent progression alternative was costed at 80 per cent of the original

recurrent unit costs and 10 per cent of capital costs per place. The total was added to the costs already calculated for the basic alternative.

Under the basic cost projection, public second-level school costs will average 11.0 per cent per annum growth from 1972 to 1980. The 80 per cent progression alternative involved expenditures 39.7 per cent higher in 1980, giving an average rate of growth of 15.7 per cent per annum; the 65 per cent progression alternative (combined with compulsory six-year education) entailed an increase of 37.7 per cent of public second-level schools costs in 1980 and a growth of 15.5 per cent per annum over the whole period.

3. Vocational and technical education

For public vocational and technical education five separate cost projections were made: one for vocational schools and vocational teacher training; one for technical colleges; and one for each of the three parts of Prachomklao Institute of Technology. As the Institute of Technology used less than 5 per cent of the total budgets of vocational and technical education, we do not intend to concentrate any attention on the methodologies used and the results obtained in costing its three branches, but instead attention will be focused on the quantitatively more significant details of the vocational schools' and the technical colleges' cost projection.

The over-all teacher salaries were calculated using the methodology outlined in the introduction, taking account of increasing pupil/staff ratios, the changing qualification structure and the changing experience structure of the teaching force. During the third five-year plan period there will be very little change in the average experience of teachers: for Bachelor teachers the experience will fall from an average of 8.9 years in 1970 to 6.7 years in 1976; for higher certificate teachers the equivalent figures are 8.0 and 8.3 years. In total the average salary per teacher was calculated to remain quite constant over the period 1970 to 1980, only beginning to rise at a very slow rate from 1973 (having fallen until then). The cost per pupil for teachers' salaries will fall from 1970 to 1976 as pupil/staff ratios increase and will only begin to rise towards the end of the period.

Not all the enrolments in vocational and technical schools were costed fully as some schools and colleges were offering twilight courses (part-time evening study). The largest item of expenditure for the twilight courses was the extra salary that has to be paid to the teachers. These extra payments appear in the remuneration rate which had to be calculated separately taking account of the number of part-time or twilight students.

Despite the fact that the level of non-teaching costs is already very much higher in technical and vocational schools than in any academic or comprehensive second-level schools, no rapid reduction was thought feasible. For vocational schools it was assumed that non-teaching costs would rise at 2 per cent per annum (the same rate as general prices) throughout the period, and technical costs at only 1 per cent per annum during the third five-year plan and 2 per cent thereafter. Central recurrent costs were also assumed to grow at 2 per cent per annum.

One of the hardest problems in costing the entire educational system was to arrive at some reasonable capital cost per place for technical and vocational education. There were no standard plans and those plans that did exist referred to a large number of different types of institutes offering many different courses. Even through analysing past expenditures no particularly usable figures were arrived at. In the end we created our own theoretical standard plans and costed these very roughly to obtain a figure for cost per place in the base year (1971). The conclusions of the recurrent and capital unit costs are shown in Table 58.

TABLE 58. Capital and recurrent unit costs of full-time government vocational and technical schools, 1971-80 (in baht).

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Recurrent										
Vocational	2 912	2 896	2 863	2 887	2 895	2 908	2 922	2 952	2 981	3 011
Technical	4 656	4 565	4 520	4 434	4 385	4 354	4 340	4 340	4 363	4 406
Capital										
Vocational	20 000	20 700	21 424	22 174	22 950	23 754	24 585	25 446	26 336	27 258
Technical	25 000	25 875	26 781	27 718	26 688	29 692	30 731	31 807	32 920	34 072

The costs of replacement and improvement of existing facilities were added to the costs derived from applying the full-time enrolments to these figures. With the already high level of capital cost per place (for vocational schools: about three times the figure for second-level schools, including replacement expenditures) it was felt that it would be sufficient if the 1970/71 level of replacement activity continued, and thus only a 3.5 per cent per annum increase on the replacement and improvement of existing facilities was assumed.

For the Prachomklao Institute of Technology the standard costing methodology was again used. An attempt was made to equalize the teacher and remuneration costs at the three branches of the Institute, and to give the largest increase in non-teaching costs to the branch with the lowest level of these costs in our base year. Although recurrent unit expenditures rose at different rates, on average they grew at about 2 per cent per annum. For capital costing again there were very few data and the projections were based on very tenuous figures. The results of these projections can be seen in Table 38 in Appendix I.

In total the projected costs of public vocational and technical education will grow at 4 per cent per annum over the period 1972-80 and their share of total expenditures (in the basic alternative) will fall from 7.1 per cent in 1972 to 5.3 per cent in 1980. This low rate of growth and falling share of total expenditures

is caused by two factors, firstly, in 1972 capital expenditures were very high (thus there will be almost no growth in total expenditures, despite increasing enrolments, between 1972 and 1975) and, secondly, increasing emphasis will be placed throughout the projection period on non-formal vocational and technical education so that a decreasing burden of the total manpower requirements has to be met through the formal system.

No alternative projections were made for either vocational or technical education.

4. Teacher-training colleges and the College of Education

Separate cost projections were made for the College of Education and the teacher-training colleges. Although the teacher-training colleges offer courses at several levels it was not found possible to differentiate between them and only one set of unit cost figures was calculated. Even though twilight enrolments were very large, they were not considered in the costing, for the level of fees charged is sufficient to pay all the extra costs caused by operating the teacher-training institutions in the evening. The projections were limited to investigating the costs that would have to be borne by the central government under the existing system of financing and it was not necessary to consider the impact of twilight students.

It was not easy to project the salary costs of teacher training using our usual methodology, for very often new instructors have had considerable experience (whereas in other parts of the system they are generally newly qualified). There was no possibility of fitting the equation to past data as the average experience of the new instructors was unknown. Taking account of all the factors, including the rate of growth of the teaching force and the qualification structure (which was considered satisfactory), and comparing them to what was happening in other parts of the system, we came to the conclusion that the average salaries of instructors in teacher-training institutions should grow at about 1 per cent per annum over the entire period. During the early part of the period the pupil/teacher ratio in the College of Education was projected to increase, and until 1976 the teacher costs per pupil in the College would decline, while those in the teacher-training colleges would rise.

As there was a considerable housing programme taking place in teacher-training institutions (reducing the need for housing allowances) and as the part-time earnings of teachers did not appear in the government accounts, a slight fall in the remuneration component of teachers' salaries was posited.

For the non-teacher costs, taking account of past unit cost trends and comparing the non-teaching unit costs in these institutions with other parts of the educational system, it was decided that the College of Education non-teaching unit costs should grow at 2 per cent per annum until 1976, and 3 per cent per annum thereafter; the teacher-training colleges unit costs were projected to grow at 1.5 and then 2.5 per cent per annum.

The costs per pupil of central services (supervision, evaluation, and research) have been falling during recent years at an average rate of 9 per cent per annum.

However, in 1970 they were still very much higher than in any other part of the system and a continuing downward trend was projected as enrolment expanded (decreasing at 4 per cent per annum over the period 1970-76). After 1976 they were assumed to stabilize, only to start increasing again at the end of the period.

There were considerable problems in arriving at an acceptable figure of capital costs for teacher-training institutions, for although standard plans did exist, they involved a considerably higher capital cost per place than had existed in the past and were based, not only on the assumption that the College of Education should have the same facilities as a university, but also that the vast majority of students and staff should be housed on campus. Housing students on campus could be justified, for the colleges give only two years' training to teachers who will spend the next thirty years alone teaching in the rural areas and a total environmental approach to education was needed. However, there was no reason why the College of Education should have the sometimes extravagant facilities available at some universities. In the end it was agreed to accept the unit cost figures from the standard plans, but to allow no increase in the cost per place from 1971 to 1976 to take account of increasing building prices. In other words, we assumed that there would, in real terms, be a fall in the cost per place of about 16 per cent from 1971 to 1976. In Table 59 the recurrent and capital unit costs for teacher-training colleges and the College of Education are shown.

TABLE 59. Capital and recurrent unit costs borne by government of teacher-training institutions, 1971-80 (in baht)

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Recurrent										
Teachers' coll.	2 494	2 513	2 535	2 562	2 588	2 618	2 670	2 724	2 780	2 830
College of Educ.	5 867	5 814	5 784	5 763	5 760	5 761	5 876	5 994	6 114	6 235
Capital										
Teachers' coll.	25 000	25 000	25 000	25 000	25 000	25 000	25 870	26 780	27 720	28 690
College of Educ.	40 000	40 000	40 000	40 000	40 000	40 000	41 400	42 850	44 350	45 900

Over the period 1967 to 1970 the capital costs of replacement and improvement were rising at a very rapid rate (averaging 15 per cent per annum). However, as the *rate* of increase was declining it was assumed that, in real terms, these costs should rise at only 5 per cent per annum. Taking account of the increase in cons-

truction prices, an increase of 8.5 per cent per annum was used in the cost projections.

Despite the fact that the assumptions used in the cost projections for teacher training tended to overestimate the minimum budget requirements, the total government financing requirements for teacher education were considerably lower in 1980 than they were in 1972. In 1972 the teacher-training colleges enrolments were still increasing rapidly, whereas thereafter, thanks to the tremendous expansion that took place from 1969 to 1972, only a slight increase in enrolments would be required. The capital budget, which was considerably more than 50 per cent of the total budget in these years, decreased very dramatically from 1972 to 1973, and will continue to decrease at a faster rate than the increase in recurrent expenditures. For the College of Education, enrolments will continue to increase rapidly throughout most of the third five-year plan period, but thereafter no further increase will be needed, according to the teacher supply and demand calculations. It should be mentioned that in real terms there are unlikely to be these falls in budgets, and that in 1972 the actual budgets for teacher education will be considerably lower than those shown in Table 38 in Appendix I. This is possible as the high capital expenditures can in fact be rephased to even out over the whole period. Recurrent budgets must always be used in the year in which they are needed, but with capital expenditures there is very often considerable possibility for postponement, either by greater utilization of existing facilities, or by using temporary facilities. For example, in one teacher-training college a cowshed has been converted into thirteen classrooms. This is obviously not a permanent solution, but it does allow rephasing of desired capital expenditures.

In our cost projection exercise we have calculated the annual government expenditures required if the enrolments projected are to take place without serious problems. However, if the projected expenditure (either for a part or the whole of the system) is too high, either new financial resources must be found or some of the *capital* expenditures must be rephased.

No alternative projections were made for teacher education as different alternatives of enrolment would involve less than 1 per cent change in total expenditures.

5. University education

We have already dealt briefly with the costs of two university-level institutions, the College of Education and Prachomklao Institute of Technology. There are nine conventional government universities and the new open university of Ramkamhaeng. The costs to the government of overseas training at the third level should also be projected, but no figures were available even of the number of students studying overseas under different forms of sponsorship, let alone the past levels of government expenditure on overseas training (spread among a large number of agencies). This item had to be ignored and, in any case, it is relatively insignificant.

For the nine universities the budget required during the third five-year plan was calculated on the assumption that there should be equalization of unit costs for similar subjects and items of expenditure in different universities by the end of the plan period. This was absolutely unacceptable to the university authorities and the final cost projection was based on a detailed evaluation and analysis of over one hundred and fifty projects submitted by the universities.

There was considerable difficulty in continuing the third five-year plan cost figures through to 1980. Enrolment projections existed only by field of study and not by university, and the unit-cost figures for the same subjects in different universities will still differ quite widely in 1976. It was finally decided to project the costs to 1980 using a weighted index method, based on the results of the project analysis projection in 1976, combined by field of study and not by university. The recurrent unit cost of social sciences (used as the base) was given a weighted index of 1.0 and all other recurrent and capital unit costs were expressed in terms of it. These indices are shown in Table 60.

TABLE 60. Weighted indices used for university cost projections, 1977-80, by field of study, (social science recurrent unit cost = 1.0 in 1976)

	Social science	Educ.	Human.	Fine arts	Science	Agric.	Eng.	Med.
Recurrent unit costs	1.0	1.7	2.0	2.0	3.0	2.7	4.3	7.0
Capital costs per place	13.3	13.3	13.3	13.3	20.0	20.0	30.0	40.0

It was then assumed that there should be no increase in the recurrent weighted unit indices as there was still thought to be considerable scope for decreasing the unit costs in some of the more expensive universities, and for economics of scale in the other universities. The indices of capital cost per place were assumed to grow at 3.5 per cent per annum to take account of increases in prices. An index of total costs was then worked out for 1976 and 1980 using the enrolment projections by field of study, and the growth calculated (the index of total costs increased from 285,000 in 1976 to 443,000 in 1980, a growth of 11.6 per cent per annum). This growth rate was applied to the third five-year plan university budget for 1976, to arrive at rough figures of the expenditure requirements from 1977 to 1980.

There were two reasons why this weighted index method was chosen rather than real unit-cost figures. Firstly, because it proved very difficult to make any precise calculations of unit cost figures in 1976 (no definitive value was claimed for unit costs in that year) and, secondly, because any unit-cost figure used would lack significance as the range between different universities was so great. In addition, it was impossible to arrive at any reasonable figures of capital costs per place from the 1976 budget, except for the guidelines used for the university project evaluation. In general, this weighted index method was used in order to

draw attention to the fact that considerably less reliability is claimed for these university cost projection figures than for other cost projections.

For Ramkamhaeng University, the open university, the fees paid by the students are meant to cover almost all the recurrent costs. However, some government subsidies are used for equipment and to cover a small proportion of the running costs. For the third five-year plan no increase in the level of subsidies was projected. Nevertheless it was felt that, as student numbers were projected to increase rapidly after 1976, an increase in the subsidies of about 10 per cent per annum would be needed. Much more important, however, is the need for a permanent home for the university, as at present it is occupying temporary buildings. The government is already committed to moving the university to a new site, but this is unlikely to happen until after the end of the third five-year plan. Obviously buildings will have to be provided at the new site. Although the enrolment in 1980 is projected at 114,900, only about half will be attending courses with any regularity. The majority of students will be enrolled in general courses and a low cost per place can be assumed. A cost per student place of about 10,000 baht would be required and places would be needed for only 50 per cent of the theoretical enrolment in 1980. Thus a total capital expenditure of 574.5 million baht would be needed to construct Ramkamhaeng at its new site. This figure was distributed over the four years from 1977 to 1980 assuming a 10 per cent per annum increase.

In total the projections for university education were neither especially sophisticated nor accurate, particularly after 1976, but were the best that could be obtained from the very limited data. When there are only a few institutions the real problem is that macro-methods no longer provide very usable results and separate institutional projections are required.

However, despite the faults of the methodologies used, the nine universities and Ramkamhaeng required a growth in government financing of 12.1 per cent per annum from 1972 to 1980 and they will increase their share of total educational expenditures under the basic alternative from 16.3 per cent in 1972 to 19.6 per cent in 1980. No alternative university enrolment projections were made and the cost projections described above were used in all the alternatives.

6. Adult and non-formal education

Although there are a very large number of adult education activities taking place in Thailand, sponsored by many different agencies, sufficient data were collected only on the four major programmes. The Adult Education Division in the Ministry of Education runs functional literacy classes, vocational training classes from mobile and fixed centres and evening classes using the formal school curriculum; in addition it operates libraries in towns all over the country, as well as offering some short-term evening courses in a few vocational schools or polytechnics. The Accelerated Rural Development (ARD) organization operates vocational training schemes in various rural areas, as well as spending considerable time and energy

on other development activities—from road-building to community development—in the more sensitive areas of the country. The National Youth Promotion Committee (NYPC) is a relatively new organization offering both leadership courses to youth from backward areas of the country and vocational training courses. As was mentioned above, there are a large number of other government, parastatal and private organizations offering non-formal educational courses of one kind or another, but in comparison they are relatively small in size and require rather insignificant government financing.

As can be seen from this description, there is a wide range of different non-formal educational activities taking place, even when we assume a very limited definition of non-formal education. Projecting enrolments and costing all the various activities was no easy matter.

For the third five-year plan the various organizations were asked to project the most rapid possible expansion in their activities, since one of the priority areas in the plan was the expansion of adult and non-formal education. Thailand was eager in the long run to realise a policy of life-long education and, more importantly, it was felt that the costs of non-formal education were very much lower than those in the formal system with better immediate benefits. These projections were then studied, co-ordinated with each other and account taken of various other factors, such as the regional distribution of the different activities, before the final projections were agreed upon. For example, the number of students participating in all the different courses run by the Adult Education Division was projected to increase at an average of 23.5 per cent over the third five-year plan period. For the students in the programmes in the Vocational Education Department the equivalent figure was 19.2 per cent per annum. (We cannot realistically talk in terms of non-formal educational enrolments as some courses might last for three months with a few hours of study per week, others for six months with several hours of study per day, etc.)

For each of the separate activities (totalling almost twenty), separate cost projections were made taking account either of the extra earnings paid to the part-time adult-education teachers, or of an analysis of past levels of unit costs (per pupil, per library, per audio-visual unit or per class). From these totals, levels of expenditure could be calculated and the fee income subtracted to arrive at the total cost to the government. (In the courses run by the Adult Education Division fees can be quite high, varying from nil for literacy classes to 480 baht per year for evening courses at the upper second level.)

The methodologies used in costing all the different activities were quite simple, but no standard method was used as neither the basic data nor the activities were comparable. It would take up too much space in a paper such as this to devote attention either to the methodologies used or to the basic conclusions. In general, however, detailed project costing was carried out (except for the courses run by the Adult Education Division where the costs of the extra salaries paid to teachers, the materials supplied to pupils and the equipment per class were calculated). In the vocational department courses unit costs were used (about 700 baht per pupil for a half-year course and 2,200 baht to 3,300 baht for each

double student place per annum). With the NYPC, which is a new activity and where the government provides only a subsidy, no justifiable methodology was used and it was assumed that the third five-year plan subsidy (fixed on an *ad hoc* basis) would be continued.

The government attached great importance to adult and non-formal education. Not only will the share of non-formal education more than double, from 1.1 per cent of basic expenditure in 1972 to 2.4 per cent in 1980, but the rate of growth of non-formal educational expenditures will be more rapid than that of any other sector of education, growing at an average of 19.0 per cent over the period 1972-78. In addition, a high-level committee has just finished studying the whole existing system of adult and non-formal education and has made recommendations on how the system can be better co-ordinated and made even more effective.

Increasingly, educational administrators are becoming convinced that, with the high costs of formal education (in terms of GDP *per capita*), the ever increasing public demand for education and the urgent need to upgrade the skills and knowledge of the whole population, rapid and egalitarian development can take place only if adult and non-formal education play a wider role in the over-all educational system of the country. As adult and non-formal education were already planned to expand as rapidly as possible, no alternative projections were made.

7. Other education

There are in Thailand, as in any country, a large number of educational activities that are difficult to attribute to any particular level or type of education. For example in the Under-Secretary's Office in the Ministry of Education, apart from the purely administrative units, there is a division responsible for educational broadcasting, one responsible for guidance, one for giving special subsidies to Moslem schools in the south of the country, and so on. In the Ministry itself there is a department responsible for developing and disseminating new educational materials and techniques, a department responsible for physical education, and one responsible for fine arts education. In addition there are the subsidies paid to private schools which are not differentiated at all between types and levels of schools. Not all the activities of the organizations mentioned above can be considered educational in the most limited sense of the word and, before any cost projection could be made, the educational and non-educational activities had to be identified and separated.

For example the Physical Education Department is responsible for training physical education teachers and assisting schools in their programmes, and also runs the National Stadium. The former are considered to be educational activities and the latter not. The Fine Arts Department runs schools of music, drama and dance, and is also responsible for the National Museum and National Archives. Again the former are considered as educational expenditures, the latter not.

For the third five-year plan the cost projections made for these other educational activities (except for private schools) were based on a careful evaluation of the projects submitted by the relevant departments. For the private schools, subsidies were based on the enrolment projections, the future qualification structure of the teaching force and their past behaviour compared with the change in the proportion of subsidized teachers by qualification. The future number of teachers was calculated and from this the total subsidy could be worked out.

For the period 1977-80 (again excluding the private school subsidies, which account for about 60 per cent of these expenditures), the projections were based on the assumption that the 1972-76 trends of expansion would continue through to 1980. We had to use this method as there were no projects to evaluate. For private schools the same method was used as for the third-plan period. Both private schools' enrolment figures and teachers' qualification structures were projected to 1980.

In total, other educational expenditures were expected to grow slightly faster than total educational expenditures under the basic alternative, growing at 8.9 per cent per annum between 1972 and 1976 and at 8.1 per cent per annum from 1976 to 1980. During both periods the largest item, subsidies to private schools, will grow at a slower than average rate and government expenditures on improving educational techniques will grow at the fastest rate. Finally, it should be mentioned that these figures were used for all the alternatives.

8. Conclusions

The greatest attention in costing was paid to the levels and types of education which required the largest government support. Up to 1976 (the end of the third five-year plan) detailed information was available and all the projections (except perhaps some of the capital cost calculations) could be considered as reasonably accurate; for the later period, rough 'rules of thumb' or past-trend analysis methods had to be used for the universities and many of the smaller parts of the system, and only about 70 per cent of the total budget can be considered as reasonably accurate. If the possible level of inaccuracy of the 70 per cent is $\pm$ 2 per cent and that of the other 30 per cent $\pm$ 10 per cent, this gives an over-all accuracy for the projection of $\pm$ 4.4 per cent. Even these assumptions might be rather optimistic for figures so far in the future, and are certainly optimistic if the past patterns of budget allocation continue based on hierarchical and social considerations. Complete accuracy for these projections is not claimed, but in the pages that follow, it is assumed that the projections do express the order of magnitude of the government's financing requirements, assuming no change in the pattern of financing.

Before going on to discuss the apparent financing gap when compared with the likely level of government revenue for education taken from the previous chapter, several general observations can be made on the costing exercise.

We have not, for example, costed all items of government expenditure directly

attributable to education. Some of these omitted items have already been mentioned, such as the cost of overseas scholarships, but there are other relatively small items not included through a lack of data. No reasonable figure was obtainable for the pensions paid to retired teachers, for, as teachers are classified as civil servants, there is no way to estimate what share of total civil service pensions is paid to ex-teachers. We could, of course, calculate what the present value of future pensions of serving teachers might be, but as we are interested in actual expenditures and their financing this would not be particularly useful for our purposes.

Insufficient data were available on the expenditures of schools run by the army and the police. These schools are usually for the children of serving personnel, although sometimes special schools are established and run by the police in the most sensitive areas of the country. These omissions are not too serious, firstly, because they are unlikely to make up a significant proportion of total government educational expenditures and, secondly, because the projection of government revenues for education (shown in the previous chapter) is based on actual expenditures in 1970 and does not include these items. Thus, whatever is missing from the expenditure calculations was not included in the revenue calculations either.

Comparing the government's total expenditures on education with the revenue that is likely to be available, it immediately becomes apparent that all the alternatives involve a significant financing gap, i.e. the government expenditures are likely to be more than the available revenues. This can be seen clearly in Table 61.

TABLE 61. Distribution of required budgets by level for each alternative, fiscal years 1972, 1976 and 1980 (percentage)

	Basic alternative			Six-year first level		80% P7/MS1		Six-year first level + 80% P6/MS1		Six-year first level + 65% P6/MS1	
	1972	1976	1980	1976	1980	1976	1980	1976	1980	1976	1980
First level	52.9	53.4	48.6	54.0	49.6	52.5	45.4	53.1	46.4	53.7	46.6
Second level, voc. & T.T.	24.8	24.0	25.2	23.7	24.7	25.3	30.0	25.0	29.5	24.1	29.3
Third level	18.1	17.3	20.6	17.1	20.2	17.0	19.3	16.8	19.0	17.0	19.0
Other education	3.1	3.2	3.2	3.1	3.1	3.1	3.0	3.1	2.9	3.1	3.0
Adult and non-formal	1.1	2.1	2.4	2.1	2.4	2.1	2.3	2.0	2.2	2.1	2.2
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Financing gap (%)	7.8	6.8	5.2	8.1	7.0	8.4	11.3	9.6	12.9	8.6	12.6

The most surprising fact illustrated in the table is that there is a financing gap even during the first year of the third five-year plan. In preparing the final draft of the plan we were well aware of this fact. During the last few weeks of plan

preparation shortages of government resources necessitated a reduction in the plan budgets originally allocated for education, and social pressures resulted in a slight increase in some enrolments. Rather than revise the whole plan, it was decided instead to stress the necessity for greater utilization of facilities and for raising new financial resources for education if the plan was to be implemented.

In the plan there is provision for 660 million baht of foreign loans for education, and 1,050 million baht for grants. It is rather difficult to know exactly how this foreign aid should be dealt with. Most grants are used not to cover planned expenditures, but for extra expenditures on fellowships, experts and special equipment. Loans, although they are generally used to finance capital expenditures included in the plan, usually involve somewhat higher costs than if the government financed the expenditure itself; they are sometimes used to finance technical assistance and fellowships. Only part of the anticipated loans, and none of the grants, can be considered as effective revenue for closing the financing gap shown in Table 61. It is unlikely that more than 20 per cent of this gap could be bridged with foreign loans. For the basic alternative this means there will still be a gap of 5.4 per cent in the last year of the plan.

From Table 61 it can be seen that the financing gap in 1980 varies from 5.2 per cent of total expenditures under the basic alternative to 12.9 per cent under the six-year first level and 80 per cent P6/MS1 alternative. This wider financing gap does not pose insurmountable problems, as long as the government actively searches for new financial resources for education, and as long as the expenditure projection (involving considerable control of unit costs), and the revenue projection (involving a relatively high rate of growth of government revenues for education) can be implemented and achieved. For example, over the period 1972-80 educational revenue is projected to grow at an average of 8.4 per cent per annum. If this growth were 1 per cent per annum less, the financing gap in 1980 would vary between 11.9 and 19.0 per cent of total expenditures. Thus, given the possible inaccuracy in both our expenditure and revenue projections, it is necessary to find new resources for education in excess of the amount shown as the financing gap.

The expenditures for each level and type of education, the rate of growth and change in share of total expenditures and an analysis of the financing gap can be seen in Tables 47 and 48 in Appendix I.

D. Financing the Thai educational system during the 1970s

In this, the concluding section of this study, we intend to make various positive proposals as to how the financing gap, derived from the calculations of government revenue available for education in Section B (page 118), and the calculations of government expenditure required for each of the alternatives in Section C (page 146), could be closed.

At the outset it should be noted that the expenditure figures refer to the required level of central government expenditures, assuming that existing patterns continue throughout the decade. These calculations, therefore, assume that there is no change in school fees, no change in the proportion of total costs financed by local governments or municipalities, no change in the proportion of total expenditures met from donations, and no change in the amount of free labour parents are prepared to supply in constructing the schools for their children. Thus, if we decide to consider any of the above items as potential sources for closing the financing gap, we can include only revenues over and above those that would be earned if the present pattern of financing were to continue.

It can be seen from Table 48 in Appendix I that in 1976 the financing gap will vary from 6.8 to 9.6 per cent of total expenditures, and in 1980 from 5.2 to 12.9 per cent, depending on the alternative. Rather than confuse the reader by continuously referring to the different alternatives and the percentage that each new financing proposal would save compared with the other alternatives, all calculations and comparisons of possible resources will be restricted to the basic alternative. Thus, in a proposal for increasing school fees, only the extra revenue for the enrolments in the basic alternative will be calculated and the extra revenue compared with the basic alternative expenditures.

We do not feel that very much will be lost from the study by doing this, for we are concerned not so much with the exact figures of the new financial resources that *will* be made available for education, as with the order of magnitude of the resources that *might* be made available. When an estimate is made as to how much the fees per pupil could be increased there seems little point in calculating five different alternatives from a base which is only an informed guess. This does not, of course, mean that resources are sought only to close the basic alternative's financing gap of 6.8 per cent in 1976 and 5.2 per cent in 1980. The objec-

tive is to find new financial resources for about 11.0 per cent of the basic alternative expenditures in 1976 and 15.0 per cent in 1980, slightly more than enough to close the financing gap for all the alternatives.

It is not possible to cost all the proposals for increasing the financial resources for education. For some, the revenue calculated is based on assumptions which are little more than intelligent estimates designed to express the orders of magnitude of possible extra revenues. It is hard enough to make a reliable future projection of something that exists now; it is very much harder to make a projection (and much more likely to be inaccurate) about something which does not yet exist and on which no decision has been taken.

1. Increased fees

The easiest way to raise extra revenue for education is to increase the amount of fees charged. There seems little reason why the individual should not be asked to pay for a larger proportion of his education, because with every succeeding level he is likely to benefit through increased lifetime's earnings and enhanced social standing. An increase in school fees is particularly justified as pupils not fortunate enough to get into government schools are paying very much higher fees in private schools for what is generally considered to be a lower-quality education.

It can, of course, be argued that an increase in fees at the higher levels will reduce the degree of equality of educational opportunity, as poor children will no longer be able to continue their education. This point has some justification, but much less than might appear to be the case at first sight : firstly, because even without fees the costs of education, both in terms of books and uniforms that have to be bought and in terms of forgone earnings (money the pupil could have earned if he was not in school), are already too high for the poor family to meet without some scholarship assistance; secondly, because in Thailand, in common with all other countries, the majority of the children in the higher levels of education come from the more prosperous families. Whether fees are increased or not there must be some method of ensuring that the brilliant child from a poor family is not prevented from continuing his education through a shortage of money.

There is no way of estimating how much fees could be increased. The limiting factor is probably the degree to which the government is prepared to upset the electorate by increasing fees. We felt that as long as the new fees proposed were not higher than the minimum usually charged by private schools and as long as the increase did not involve more than a doubling of current fees, the level of protest would not be too great. Obviously, in introducing an increase in fees, the government would have to be very tactful to avoid a public outcry, for education is a political subject which affects everybody.

At the third level, where the largest individual benefits from education are to be gained, it was felt that there should be a very great increase in the level of

fees charged so that, eventually (say by the end of the century), fees would be sufficiently high to cover most of the costs of running the universities. If third-level education fees are to be increased to the level of expenditures, many poor and middle-class students will find it impossible to pay. Thus our proposal, involving at least a tripling of university fees, is combined with a proposal to provide loans enabling students to pay these high fees. The loans would carry a nominal interest rate large enough to make up for any loss in revenue caused by non-repayment. It will be insisted that each student pay back the loan within five years of his graduation. The government might, however, be prepared to change the loan repayment schedule for graduates prepared to work either in difficult jobs or in remote and hazardous parts of the country. Increasing fees dramatically at the universities and providing loans so that needy students can pay them will enable the government to raise more revenue and to have more control over allocating newly qualified manpower. Not all third-level education students will require loans. A considerable proportion of the parents of the students will be able to afford the higher fees, which, excluding the dormitory fee, will still be less than 3,000 baht per student per year. It was therefore assumed that only 60 per cent of the students would require loans. Table 62, derived from Table 43 in Appendix I, summarizes the assumptions made about unit fees and also the total results.

In total these proposals, involving an increase of fees per annum of 60 baht for upper-cycle first-level education and 2,000 baht for third-level education (combined with a loan scheme for 60 per cent of third-level students), result in a saving of 3.06 per cent of the basic alternative expenditure requirements in 1976 and 4.02 per cent in 1980.

2. Increased utilization of facilities

Of all resources that exist in developing countries, there is probably a lower level of utilization of school buildings than of virtually any other facility. This is because schools operate only for six or seven hours a day and for 180 days of the year. During the rest of the time occasional extra-curricular activities take place, but normally the school is locked up and the teachers on holiday. There are many different ways of increasing the utilization of teachers and physical facilities. The easiest method is to enrol a second shift into the school after the first shift has finished studying. Specialist teachers who are not fully occupied during the first shift can also work in the second shift. Very few physical facilities would be needed for the two-shift operation of the school over and above those already available for one-shift operation, except perhaps for some additional library and practical workshop facilities.

It is normally not possible to run all schools on a double-shift basis. Only those schools which are in areas of high population density, or in urban areas where pupils can find accomodation, have sufficient enrolments in their catchment areas to warrant the opening of a second shift.

TABLE 62. Proposed increase in unit school fees and the fee revenue as a percentage of basic educational expenditure

	First level	Second level			Third level			
	P 5-7	Acad.	Voc.	T. T.	C. of Ed.	Tech.	Univ.	Open
Original fee p.a. (baht)	0-40	160-200	100-200	160-200	350	500	500	—
Proposed increase in unit fee p.a. (baht)	+60	+90-100	+100-150	+90-100	×2 150	+2 000	+2 000	—
Total requirement financed from fees								
1976 (%)	1.68		5.61			4.73		
1980 (%)	2.21		5.31			7.79		

After studying the potential for operating both first- and second-level schools on a double-shift basis the conclusion was reached that, to avoid problems, double-shift operation of schools ought to be restricted to schools in urban areas. Other schools might eventually be able to operate on a double-shift basis (as has been assumed in the six-year first level + 65 per cent progression alternative), but this would require a very careful and detailed school zoning exercise.

It was assumed therefore that without too much difficulty, 50 per cent of the *increase* in enrolments in municipal schools over the period 1972-76 could be catered for in a second shift plus 20 per cent of the increase in public second-level schools (20 per cent being roughly that part of the increase planned to take place in large towns).

In municipal first-level schools it was estimated that the second shift would require only 90 per cent of the normal recurrent unit cost and only 10 per cent of the normal capital costs per place. In public second-level schools a larger proportion could be saved; the recurrent unit costs of the second shift were estimated to be about 80 per cent of the normal costs; with capital costs the same saving was expected as with municipal schools.

In total about 0.73 per cent of first-level expenditures would be saved in 1976, and 1.10 per cent in 1980, through double-shift operation of municipal schools for 50 per cent of the increase in enrolments. The savings of total expenditures on second-level education were much more significant even though only 20 per cent of the increase in enrolments would be involved; 5.38 per cent of total second-level expenditures would be saved in 1976 and 6.49 percent in 1980.

One of the problems with vocational second-level and technical education in Thailand is that the graduating pupils have often had insufficient practical experience, and employers prefer to employ people who have passed through various informal types of apprenticeship. Although weak in the theoretical background, such people are well versed and competent in the practical aspects of the job.

In addition, as both vocational and technical education are very expensive compared with academic second-level education, it is important to ensure that all those who study in these schools do in fact find employment where they can use the skills learnt at such a high cost. (However, the earnings of school-leavers from vocational schools are not much different from those of ordinary second-level school-leavers.) It is also important to reduce the unit costs of vocational and technical education.

If 'sandwich' courses were introduced in technical and vocational schools all the above problems could be solved. In a sandwich course a student alternates between spending three or six months studying, and three or six months working. He alternates periods of mainly theoretical *study* with periods of practical *work*. When he finishes his course, which might take a large number of alternate study and work periods, he is not only certain of a job (in the factory in which he has been working), but he has also had a much better practical training than he could possibly have obtained from school alone. This training has been achieved at

a low cost as each vocational or technical school place can now be used for two students; when one student is working another can study in his place.

We therefore assumed that *all* the increase in full-time vocational enrolments planned over the period 1972-76 could take place by converting schools and colleges to sandwich operation. By 1980 about 50 per cent of vocational enrolments would be in schools operating sandwich schemes. As far as technical enrolments are concerned, 50 per cent of the increase in enrolments should take place in colleges operating on a sandwich basis; by 1980 slightly more than 50 per cent of total technical college enrolments would be working in industry for half the year and studying for the other half.

It was calculated that for the second group of students added to each institute converted to sandwich operation, the recurrent unit costs would be only about 70 per cent of the unit costs of normal operation. It was also estimated that almost no extra physical facilities would be required and only an extra 10 per cent of the normal capital cost per place was thought to be needed.

Altogether, the introduction of double shifts into second-level schools to cater for 20 per cent of the increase in enrolments, and sandwich courses in about 50 per cent of vocational and technical schools and colleges by 1980, will save about 8.4 per cent of the basic alternative's expenditures for second-level education in 1976 and 10.2 per cent by 1980. Apart from the savings, the training given in technical and vocational education is likely to more closely meet the country's manpower requirements.

In teacher-training colleges, there is no real possibility of increasing utilization because of the large part-time twilight training programmes that are already taking place, as well as the in-service training commitments of the colleges during vacations.

It would be possible to introduce a third semester into universities and enrol half as many students again at very little extra capital or recurrent cost. However, considering the hierarchical position of the universities in Thai society, it seems unlikely that they could be forced, for sake of economy, to reorganize their academic year and increase the utilization of staff and buildings. As the economies from this proposal would be hard to calculate and are unlikely to be implemented, we decided not to include the three-semester system as a potential source of saving by 1980.

In total, with the double shifts in municipal first- and second-level education and the sandwich courses in vocational and technical schools, about 2.7 per cent of total educational expenditures could be saved in 1976 and 3.4 per cent in 1980.

3. Parents' participation in the construction of schools

Until the 1960s a large proportion of the capital costs of first-level education were met by the local communities, who, in some areas of the country at least, participated actively in the construction and improvement of first-level schools for their children.

We are convinced that if the local authorities mounted a campaign to persuade parents of the need to construct schools for their childrens' education, the government could save very large amounts of money. Although no exact figures are available, it seems that about 50 per cent of the total costs of constructing first-level schools go towards meeting labour costs. This is the proportion of capital expenditures that could be met by the parents if the community became involved in the construction of its own school. It would be possible to produce standard kits for the construction of a school containing all the materials that would be needed. These kits could then be given to worthy communities or to those needing to expand an existing school. One or two master craftsmen might be paid by the government to supervise the construction.

Not all schools could be built by parents as soon as the scheme was introduced. It would be most easily applied in rural areas where there is a sense of community and where the parents have a considerable amount of free time during the dry season. It is likely to take some time to convince parents all over the country of the need to contribute to their childrens' education and it was assumed that community participation would take place only in local authority schools and that the proportion of communities participating would increase each year.

For the purpose of estimating the possible level of savings the assumption was made that parents would assist in constructing 10 per cent of the new places needed in local authority schools in 1972, 20 per cent in 1973 and so on, until by 1980 parents would help to construct 80 per cent of new places. With the parents' contribution set at 50 per cent of the total capital costs, 4.5 per cent of total first-level expenditures would be saved in 1976 (2.4 per cent of the grand total) and 5.3 per cent in 1980 (2.6 per cent of the total).

The saving achieved in this way could be even greater for we have not included in our calculation any estimate of the potential savings either from replacement expenditures or from the construction of teachers' houses in remote rural areas, both of which are projected to require considerable government financing over the period under consideration.

With all the proposals made for saving or for mobilizing extra financial resources, there are also other positive aspects not directly related to the financing question. For example, we feel that if this proposal could be implemented it would be the first step towards starting an effective system of community education in the country; if the parents construct a school they will feel that the school somehow belongs to them and they might also be persuaded to construct a reading room for the community at the same time.

4. New sources of income to be raised by schools

We believe very strongly that those who are fortunate enough to be enrolled in school should not feel that they are an élite favoured by the government. Accordingly, it is important that a spirit of self-reliance be developed and that pupils learn how to earn money to support their own education. We are convinced that

pupils (with the assistance of parents and school personnel) should continuously organize various money-making activities.

Movies, music and drama programmes could be organized where a small fee is charged; parent/teacher associations and alumni associations formed; parties and fairs organized; products such as handicrafts, food and crops could be produced and sold; school lunch programmes organized, either run directly at a slight profit, or as a concession sold to an outside caterer; finally, school co-operatives could be formed or discount arrangements made with local traders.

Obviously we cannot expect these activities (which already exist in a few schools) to mushroom suddenly in all schools throughout the country unless the government mounts a campaign and introduces financing mechanism as an incentive to increase their own earnings.

It might at first sight seem that only a very small amount of money would be forthcoming. This is not the case, for although any one school might show a small profit from each scheme, there are so many schools all over the country that the total might be quite large. In order to illustrate this point, and not because we feel that we can make a reliable estimate, the possible total saving that could be obtained under quite conservative estimates was calculated. The result is shown in Table 45 in the Appendix I.

Table 63 summarizes some of the main assumptions used in our calculations of these items.

TABLE 63. Assumptions used in calculating possible income raised by schools

	First level			Second level			University		
	% of schools particip.		Base yr. income per sch. (baht)	% of schools particip.		Base yr. income per sch. (baht)	% of schools particip.		Base yr. income per univ. (baht).
	1976	1980		1976	1980		1976	1980	
Movies, music, etc.	5	9	5 000	10	18	8 000	100	100	20 000
Fairs, parties	10	18	1 900	10	18	3 000	100	100	50 000
Sale of products	1	2	4 000	100[1]	100[1]	50-250[1]	—	—	—
School lunch profit	15	19	5 000	10	20	10 000	100	100	20 000
Co-operatives	—	—	—	5[2]	9[2]	20[2]	100[2]	100[2]	50[2]

NOTE The base year income per school or per pupil was assumed to grow at 2.5 per cent per annum from 1972 in all cases.

1. It was assumed that all pupils in second-level education should produce something to sell. In vocational schools an income of 250 baht per pupil per annum was assumed for 1972 and, for ordinary second-level education and teacher training, an income of 50 baht per pupil per annum.
2. Again, this item was calculated on a per-pupil basis and not on a per-school basis. For all second-level education, a base year income of 20 baht per pupil per annum was assumed and 50 baht for universities.

It can be seen from the table that relatively unambitious targets were set, both for the number of schools or puPils participating in fund-raising schemes, and for the amount of income that could be raised per school or per pupil. Yet

about 1.5 per cent of total expenditures could be met in this way in 1976 and 2.0 per cent in 1980.

In total 2.16 per cent of the basic alternative expenditures would be financed through these miscellaneous fund-raising activities in 1976 and 2.64 per cent in 1980. However, if there were a total mobilization of pupils in all schools in the country, revenue from such sources might be several times larger.

5. Increase in the share of total first-level educational expenditures financed by local authorities and municipalities

The decentralization of first-level educational administration had as one of its main objectives the desire to increase the proportion of local authorities' and municipalities' educational expenditures met from their own resources. Unfortunately this objective has not been achieved. Local authorities support only about 1 per cent of total government expenditures from their own resources, and municipalities, having moved up to supporting more than 50 per cent of expenditures in the late 1960s, have since fallen back to only about 25 per cent in 1972.

On the assumption that a formula for allocating central government subsidies to local authorities and municipalities can be worked out, taking account among other things of the effort that the local authorities and municipalities are making themselves, it should be possible for there to be a considerable increase in local financing and a gradual reduction in the proportion of the total expenditures to be met through central government subsidies. For local authorities the data show that their contribution has fluctuated around 1 per cent of total government financing of local first-level education. Taking account of the proportion of total resources that the local authorities are devoting to education, the range of this proportion from one local authority to another (see Table 18 in Appendix I) and the likelihood of reasonably rapid increases in the revenues of many local authorities, it was felt that by 1980 about 5 per cent of total government financing of local education could come from the local authorities themselves, as long as they are given an incentive through the subsidies.

As the municipalities are the most prosperous areas of the country there is no reason why, given the necessary incentives, they should not be able to finance (as in the past) 50 per cent of their educational expenditures from their own resources by 1980, despite rapid increases in enrolments and therefore relatively heavy capital expenditures.

Of course, the cost projections assume no deterioration in the present financing pattern, and it is inferred that the 1971 financing position, with local governments providing 1.1 per cent of total government resources for local first-level education, and 25 per cent of municipal educational expenditures coming from municipal resources will, at least, be continued. Thus it is only the amounts over and above those derived from these percentages that we can consider as *extra* financial

resources. Table 64 shows the total percentages of local and municipal educational expenditures financed from local resources and the increases assumed in the cost projections.

TABLE 64. Percentage of total municipal and local educational expenditures met from local resources and the increase in this percentage over and above that assumed in the 1972-80 cost projections

	1972	1973	1974	1975	1976	1977	1978	1979	1980
% from municipal resources	25	27	30	33	35	38	42	46	50
Extra % above cost proj.	1.0	2	5	8	10	13	17	21	25
% from local auth. resources	1.4	1.7	2.1	2.5	3.0	3.5	4.0	4.5	5.0
Extra % above cost. proj.	0.3	0.6	1.0	1.4	1.9	2.4	2.9	3.4	3.9

If the local authorities and municipalities increase their share as shown in the table, then new financial resources totalling 1.3 per cent of the basic alternative's expenditures will be raised in 1976, increasing to 3.09 per cent by 1980. It must, however, be emphasized that these extra revenues will materialize only if local authorities and municipalities are given incentives to increase their proportion of total expenditures.

6. Other non-quantifiable methods of reducing over-all expenditures or raising new sources of finance

One of the most effective ways of reducing expenditure and improving the over-all capacity of the system, would be to establish and enforce costing norms for all levels and types of education. In the first part of this paper one fact stood out: the fantastically wide range of unit expenditures that existed between schools of the same type. If this range could be reduced it is likely that considerable amounts of money would be saved. Until the new norms are established, however, it is impossible even to guess at the order of magnitude of the potential savings.

Similarly, if carefully worked out standard plans are prepared for all levels and types of education, designed to obtain the greatest possible usable space at the lowest possible cost, it is likely that very large savings will result.

Related to the above two points is the need to carry out space utilization studies of all educational institutions so that greater utilization is encouraged and extra space requirements calculated on the basis of standard utilization norms. Again, until such studies have been carried out, the amount of money that could be saved cannot be estimated.

We discovered that there was an inexplicably wide range of central government subsidies paid to municipalities on a per-pupil basis. Probably a similar range exists with local authority subsidies. If a formula could be developed whereby

the largest subsidies were given to those local authorities and municipalities most in need of support (taking account of fund-raising efforts, enrolment ratios, progression rates and other factors) not only could extra local finance be mobilized, but it is possible that total government subsidies could be reduced. Again, it is not possible to estimate how much could be saved in this way.

Some teacher-training colleges, in order to try and instil feelings of responsibility as well as an intelligent attitude to physical work, have mobilized their students to do all the cleaning, washing and food preparation on the campus. In addition students do all the sub-technical work in libraries and science laboratories, repair and maintain buildings and even construct some small buildings. This means that the colleges have to employ hardly any sub-technical and unskilled staff, and some money is saved. If such a scheme could become universal in second- and third-level education, significant amounts of money would be saved and the work carried out by the students would have a considerable educational impact. Once more we found it impossible to make a reasonable estimate of the potential savings.

If sandwich courses were introduced in vocational and technical schools, it might be possible to introduce a type of industrial training levy on all industries using skilled and technical manpower. This levy could be used to help finance (and modernize) vocational and technical schools, as well as various non-formal vocational training institutions. It has already been introduced in many countries with reasonable success.

Finally, if there is still a large financing gap after experimenting with all these methods of saving money and raising additional funds, then the possibility of re-introducing an educational stamp tax on all contract and receipt stamps could be investigated. This tax would fall most heavily on the beneficiaries of education. It is probably true that people would be more prepared to pay a new tax if they knew it would be spent on education, rather than just contributing to over-all government revenues.

7. Summary of financing and cost reduction proposals

In the preceding sections we have attempted to describe various proposals, which, if implemented, would either increase revenue or reduce costs so that any of the alternative enrolment projections could be implemented. In cases where it was possible to project the likely revenue or savings from a new scheme this was estimated roughly; in many cases we did not feel that there were sufficient data to make any projection.

In choosing and deciding what proposals should and could be used to close the financing gap, we preferred those which achieved some other desirable objective, as well as saving money or raising new financial resources. For instance, with parents participating in school construction, large amounts of money are saved, while the community and the school are brought closer together and the establishment of an effective system of community education is made more

likely; or, with the establishment and enforcement of costing norms, it is not only possible to save money, but it is also likely that the quality in the worst schools in the country will be upgraded and, in this way, a more homogeneous educational system will be produced with greater equality of educational opportunity. In making the financing proposals we are aware that education is a total process which takes place as much informally (out of school) as it does formally (in the school system). The way a school is financed will always have some educational impact, even if it is financed entirely by the government (this would teach people to rely on the government and to expect it to do everything for them). Whatever financing proposals are finally accepted they will have to be consistent with the educational objectives of the country. We believe that the majority of the proposals for financing the system are consistent with Thailand's educational and national philosophy, and where they are not, they constitute practical suggestions of how to achieve a desired change.

TABLE 65. New methods of financing and increased utilization of facilities to close the financing gap on the basic alternative by level of education (thousands of baht)

	1976		1980	
	Amount	%	Amount	%
First-level budget required	*4 118 179*	*100.0*	*5 100 487*	*100.0*
Increase fees	69 190	1.68	112 920	2.21
Double shifts	30 270	0.73	56 380	1.11
Raising incomes	73 270	1.78	147 729	2.90
Parents' labour	185 000	4.49	271 570	5.32
Increase in local authority financing	68 460	1.66	171 990	3.37
Increase in municipal financing	31 400	0.76	111 750	2.19
TOTAL	457 590	11.10	872 339	17.10
Second-level budget required	*1 850 965*	*100.0*	*2 641 496*	*100.0*
Increase fees	103 780	5.61	140 280	5.31
Double shifts	155 010	8.37	269 420	10.20
Raising incomes	86 980	4.70	120 750	4.57
TOTAL	345 770	18.68	530 450	20.08
Third-level budget required[1]	*1 333 142*	*100.0*	*2 165 575*	*100.0*
Increase fees	63 100	4.73	168 670	7.79
Double shifts	22 950	1.72	35 750	1.65
Raising incomes	6 600	0.5	9 070	0.42
TOTAL	92 650	6.95	213 490	9.86
Total educational budget	7 710 831	100.0	10 499 400	100.0
GRAND TOTAL	896 010	11.62	1 616 279	15.39

1. Including loan schemes.

Table 65 summarizes the total saving (or extra revenue) expected from those proposals for which it was possible to make some estimates. Of course, there are other proposals which could not be projected but which could also produce quite considerable savings.

The financing gap in 1980, according to the most expensive alternative (six years first level plus 80 per cent P6/MS1), amounts to 14.0 per cent of the basic alternative's budget requirements (or 12.9 per cent of that alternative's budget requirements). Even though the savings under each of the alternatives will not be exactly the same, it seems that if the new methods of financing or utilization were implemented, it would be possible to finance any of the alternatives as long as the basic government revenue for education grows as expected.

Let us illustrate this point with the six-year first-level plus 65 per cent progression from P6 to MS1 alternative. Although not the most expensive alternative, it will be the hardest to finance, for with compulsory upper-cycle first-level education it will probably not be possible to charge fees (thus both the original fee income and the proposed increase will be lost); nor will any savings be possible through double-shift operation of second-level schools as under this alternative they are already planned to operate on a two-shift basis.

In total, the financing gap is 13.7 per cent of the basic alternative in 1980. The lost income and savings amount to 3.6 per cent of the basic alternative's budget, but extra incomes totalling about 1.5 per cent of the basic alternative's budget will be gained through the larger number of pupils in second-level schools paying higher fees, earning more money in fund-raising activities, and through more parents participating in the construction of more first-level schools. Extra financial resources totalling 13.3 per cent (the original 15.4 per cent − 3.6 per cent + 1.5 per cent) of basic budget requirements will be available for financing a gap of 13.7 per cent, leaving an unfinanced gap of 0.4 per cent. This gap eight years in the future is, of course, absolutely insignificant.

Even if government revenue does not grow quite as fast as planned, all the alternatives could still be feasible, as long as the growth in revenue was still reasonably fast and if some of the non-quantifiable financing or cost-saving proposals were implemented.

In Table 65 the quantifiable savings are analysed by level of education. It can be seen that the largest savings were in second-level education with 20.08 per cent of basic budgeted expenditures being saved or financed with new revenues in 1980. At the first level the equivalent figure is 11.10 per cent and 9.86 per cent at the third level. More fund-raising and cost-reducing activities would be desirable at the third level in order to make greater savings, since both unit costs to the government and educational benefits to the individual are highest at this level. Unfortunately, however, no radical proposals were considered feasible for the universities at the moment.

So far foreign aid has not been mentioned, mainly because only a part of the income from loans (and almost none of that from grants) can be considered as a resource for financing expenditures already planned and costed. Loan negotiations often take so long that the process is only worthwhile for the largest

projects and no important revenues are realised from foreign sources. On the basis of the third-five-year plan figures somewhere around 1.5 per cent to 2.0 per cent of the basic alternative's required budgets could be financed from foreign loans. This give the system an even greater margin of safety (whatever alternative is chosen) to cope with possible reductions in the rate of growth of the government's educational revenues, or a faster than anticipated increase in educational costs.

E. Conclusion

The purpose of this study has been to estimate the financial resources required by the educational system during the 1970s. In order to do this it was necessary to study in detail the evolution of past educational expenditures and their financing, as well as to analyse various aspects of the growth of the economy, with a view to gaining some ideas as to how the economy (and thus government revenues) might grow in the future. This analysis of the past development of educational costs and budgets and crucial aspects of the economy was explained in Part One of this paper. Part Two concentrated on the future.

It was necessary to make alternative enrolment projections through to 1980. The five alternatives chosen expressed different philosophies currently held by various educational leaders in Thailand about the priority areas of expansion and change in the educational system. The assumptions for each of the projections were carefully chosen so that each alternative would be implementable and not impose an impossible financing burden.

Economic projections were then made, although no alternatives were calculated as our study is particularly directed towards educational decision-makers who are not in a position to influence the pattern of economic development. These economic projections cannot be considered particularly reliable as there are so many variables for which it is difficult to attribute any exact value. Nevertheless, they provided us with approximate figures of GDP, government revenues and total and educational government expenditures until 1980. Although not claimed to be accurate, these figures did provide a framework on which to base the financing discussions.

Then the total government expenditures, assuming no change in financing policies, were calculated for each of the alternative enrolment projections. From these calculations it was seen that if no new financial resources were made available for education, the government would have to devote between 4.0 and 4.4 per cent of GDP from its own sources to education in 1980, compared with only 3.2 per cent in 1970. If all public and private educational expenditures are considered, about 4 per cent of GDP was devoted to education in 1970 and between 4.9 per cent and 5.4 per cent would be needed in 1980. From the economic projection, however, it seemed likely that only about 3.8 per cent of GDP could be made

available from government resources for education in that year, which left a considerable financing gap to be filled.

In the final part of this study, therefore, various new financing or cost-saving proposals were worked out. Some of these could be quantified, while others would require considerable research before they could be implemented. From the quantifiable proposals it did seem that all five alternative sets of enrolments could in fact be implemented provided the government mounted a concerted campaign to increase the resources available for education and to reduce the cost of education through greater utilization of facilities. Without such a campaign even the basic alternative could not be implemented without a considerable reduction in educational quality.

If government revenues do not develop as quickly as projected, or if for some reason educational costs rise faster than projected, it might still be possible to implement all the alternatives as long as some of the non-quantifiable ways of reducing costs or raising new funds for education are put into practice.

In making proposals for raising new financial resources for education, schemes were put forward which would not only relieve the financing burden on the government, but also produce other indirect benefits. As far as possible those who benefited from education ought to pay directly and indirectly a higher proportion of the costs of their education; the richer people and communities should pay more than the poorer ones; the community must participate in the financing of the educational system so that the school belongs more directly to the community; every effort should be made and every possible technique used to ensure that money devoted to education is used as effectively as possible and a homogeneous school system is created with greater equality of educational opportunity.

During the course of this study a great deal of interesting data was collected and worked upon, and many surprising results discovered. Although we never had all the information required we did become aware of some of the most crucial gaps. For example, to ensure that expenditures on education are not to be wasted, it is absolutely essential that space and teacher utilization studies are carried out in all schools in the kingdom.

We were also made aware during this study of the importance of social and other non-technical factors in the budgeting process and were made to realize that techniques by themselves are of very little value unless accompanied by a strong desire on the part of administrators to use them. Thus, tactics are often as important as any techniques.

In this study, for the first time in Thailand, a great deal of information on enrolments, costs and financing of education, growth and problems of the economy, analysis of government budgets, analysis of educational objectives and philosophy, and data on the inter-relationships between all these factors have been brought together in one document. We have tried to apply a total systems approach, for we are convinced that given the complexities of any modern or traditional society, no one aspect, be it population, educational structure, curriculum, GDP, investment, unit costs, the level of school fees, or even the environment, can be considered

in isolation. Many of the most serious mistakes that have been made in the educational systems of other countries have been caused by specialists looking at only one aspect of a problem and proposing one-sided solutions.

In this paper, however, we have tried to throw light on the total system, and have tried to consider all possible aspects of costs and financing of education and their relationships to all other relevant factors.

Finally, we realise that there are many shortcomings in this study, and realise that many of the techniques we have used are relatively unsophisticated and many of the data unreliable. This, in itself, we consider to be the most important lesson, for we are now conscious that in almost every aspect of the system studied, further research is needed before we can really get to grips with the problems. Even if this study achieves nothing else, it will at least have drawn attention to large areas where crucial research must take place in the near future if we are ever to be sure that financial resources devoted to education are being used as effectively as possible in Thailand.

Postscript: recent developments, 1971-74

Since three years have elapsed since the preparation of this study, it will be extremely interesting to investigate changes in the educational system, its administration, its expansion and financing, and the evolution of unit costs, as well as in the development of the economy and government budgets. Such an analysis will demonstrate the difficulty of making any but the most indicative of predictions in the rapidly changing situations which characterize most developing (and developed) countries in today's world.

Perhaps even more interesting, however, will be a discussion of the effects this research has had on educational thinking and policy in Thailand. When this study was originally prepared, early in 1972, it was distributed (together with a 20-page summary in Thai) to all leading educational policy-makers. It is our view that the value of research such as this is dependent far more on the effect its recommendations have on the evolution of the educational system, than on the perfection and accuracy of the projections. A research project which is methodologically perfect but which leads only to obtuse academic procrastinations is (in terms of practical educational planning) not worth the paper it is written on; whilst one which though imperfect does lead to active discussion and action amongst educational policy-makers and administrators is worth infinitely more.

Thus this postscript will be divided into two major parts: the first will deal with some of the larger differences that are apparent between what was projected for the period 1971-74 and what has actually happened; the second will deal with the effect the recommendations of the study have had, or are having on the development of education and its financing.

A. Changes in the situation, 1971-1974

Given the fact that there have been two major changes in the system of administration of education, accompanied by changes in personnel and policy, it is not surprising that many of the predictions of this study have proved incorrect. When those changes are combined with the fact that in October 1973 there was a revolution in Thailand (through which a military dictatorship was overthrown)

and that since then Thailand, in common with virtually all countries in the world, has suffered from hyper-inflation and the beginnings of an economic recession, it is astonishing that any of the study's predictions should have proved useful for policy-making.

In this section some of the more important recent developments will be outlined, though obviously detailed quantitative corrections will not be provided as this would require the rewriting of the whole study.

1. The economy

Three major factors have influenced recent economic developments. First, from the fiscal year 1974 (October 1973) there has been an unprecedented rate of price inflation. Secondly, with the overthrow of the military government urban industrial workers began to organize themselves into unions and managed to achieve extremely significant increases in wages. Thirdly, government leaders became increasingly aware that if national conflict and disintegration (in the style of neighbouring south-east Asian countries) was to be avoided, absolute priority in economic development should be given to the small farm sector of the economy.

On the first point, during the fiscal year 1974 there was an overall increase in the consumer price index of 25 per cent, with an increase of about 20 per cent predicted for 1975. Fortunately, however, an increase in the price of rice has offset the oil price increase, and this combined with a reduction in the real rate of growth of imports has enabled foreign exchange reserves to be increased.

On the second point, there has been an increase of almost 50 per cent in minimum wage rates. This wage inflation has not only led to capital substitution and increasing urban unemployment (which is beginning to become a serious problem), but has also helped accelerate the price inflation.

On the third point, various recent studies have not only emphasized the fact that incomes in the poorest areas of the country have been falling significantly over recent years, but have also shown that there has been a considerable capital outflow from these areas. Thus in 1974 land reform (under peasant and student pressure) was legislated, and various other institutional measures taken to ensure that the rate of rural development be speeded up.

In total, in terms of constant prices, the economy has developed since 1971 at a somewhat lower rate than projected (under 5 per cent p.a. average instead of the 7.0 per cent p.a. assumed in this study). However, as a result of increases in import duties and more effective tax collection, government revenues in real terms have managed to keep slightly ahead of the projected figures.

2. Administration

Since this study was completed there have been two major changes in the system of administration of education. The first occurred in 1973, and involved transferring

the responsibility for public universities away from the NEC to a newly created 'State Universities Bureau' (i.e., a junior ministry). In addition there were considerable changes within the Ministry of Education, with the formation of a departmental organization responsible for all private education; the formation of two new departments, one responsible for the College of Education and the other for the Institute of Technology; the centralization of all Ministry of Education adult education activities in one division, and all research activities in one department; the creation of an Educational Technology Centre and a National Curriculum Development Centre, and the establishment of planning divisions in all the main operational departments.

The second major change occurred in 1974 and resulted basically from student and faculty pressure. In this change, the College of Education, various technical colleges and other post-secondary institutions had their status upgraded to universities and were moved away from the direct control of the Ministry of Education to greater autonomy under the State Universities Bureau. This change will have the effect of increasing graduate unemployment whilst further intensifying the shortages of higher middle-level manpower.

In June 1974 a high-level 'educational reform committee' (ERC) was set up by the cabinet and has just (January 1975) completed its report. In this report it is recommended that the administration of all levels of education (from kindergarten to university) be centralized in the Ministry of Education, while at the same time relatively autonomous departmental-level organizations be established in the regions and be made responsible for all day-to-day questions of administration.

3. *Evolution of enrolments*

The evolution of enrolments between 1971 and 1974 has remained surprisingly close to the projection in the study, as has the distribution of these enrolments between the public and private sectors. At the lower elementary, vocational, upper secondary, technical, full-time teacher training, and university levels actual enrolments are very close to projected figures. At the upper-elementary and lower-secondary levels, as well as in part-time teacher training, enrolments have grown significantly faster than estimated, because of social pressures; and most of this extra expansion has taken place in the educationally more advanced regions of the country, thus defeating some of the equalization of opportunity objectives on which the original projections were based.

Nevertheless, since much of this expansion has taken place in existing facilities, if the level of prices had remained the same the educational budgets required would have turned out quite close to the original projection.

4. *Evolution of costs and budgets*

From 1971 to 1973 educational unit costs and overall budgets progressed roughly in line with the projections in the study, except that capital expenditures for

elementary education and teacher training were significantly higher than estimated (almost 50 per cent higher in the case of teacher training), due to a greater than estimated replacement of existing facilities.

From 1974, however, because of the general inflation, all the cost and budget projections became of little value. During the fiscal year 1974 unit construction prices increased by over 40 per cent, with a further 10-15 per cent registered during the early months of the fiscal year 1975. Though no detailed recent analysis of unit recurrent costs has been made, on the basis of budget allocations (an increase in salaries) it seems that in general in the fiscal year 1974 there was a 20-25 per cent increase in unit recurrent costs, with the lowest increases at the elementary level.

Since this rapid increase in unit costs at current prices was not accompanied by any increase in the rate of fees, in local authority financing, or in donations, the rate of increase in central government budgets was much higher than originally projected in the study (from the fiscal year 1974 to 1975 there was an increase of over 40 per cent in the government budget for education compared with the 7.5 per cent increase in real terms originally estimated). Thus the percentage of GDP devoted to education has already exceeded 4 per cent, though the percentage of the total government budget devoted to education is still slightly below 20 per cent.

5. Conclusions

Given the rapid political and administrative changes that are taking place in Thailand at the moment, combined with unpredictable but extremely rapid rates of inflation, it is no longer possible to make any meaningful medium- or long-term projections of the future costs and financing of the educational system. Nevertheless the quantitative findings of the study are still useful, as they demonstrate the relative cost effects of different strategies of educational expansion, as well as emphasizing the need for new financing measures—which are even more necessary now than they were when the study was originally carried out.

B. Effects of the study on educational policy

Though obviously it is not claimed that the study alone has affected the development and financing of the educational system, certain of its important recommendations have been, or are being, implemented. In terms of research at least two important projects have been carried out subsequent to the study:

1. A complete survey of the costs and utilization of teachers and physical facilities in all schools under the Ministry of Education, in order to provide the necessary data for introducing a system (already accepted in principle) of budgeting based on standardized costing and utilization norms.
2. A survey of costs and budgeting procedures in local authority and municipal schools has been carried out, and on the basis of this new budgeting procedures (including equalization formulae) developed.

More important however is the fact that in terms of costs and financing the Educational Reform Committee based its recommendations on this study, and included proposals for significantly increasing secondary and higher education fees, developing an administrative system which would encourage much greater local participation in financing, and accepting many other proposals from the study.

Most important of all, however, are two new educational policies. First, it has been decided that government secondary schools, wherever demand warrants, should operate on a double-shift basis (the first schools opened second shifts in 1974). Secondly, it has been agreed that the elementary cycle be shortened to six years, and the school year lengthened to 200 days, so that universal elementary education can be achieved by the early 1980s (exactly as shown in one of the alternatives).

Since the study has helped to change the above major educational policies (and others of less importance in the field of adult education, planning, etc.) as well as to promote research and an awareness of financial constraints, despite the subsequent incorrectness of most of its detailed predictions, it has produced significant returns.

February 1975

Appendixes

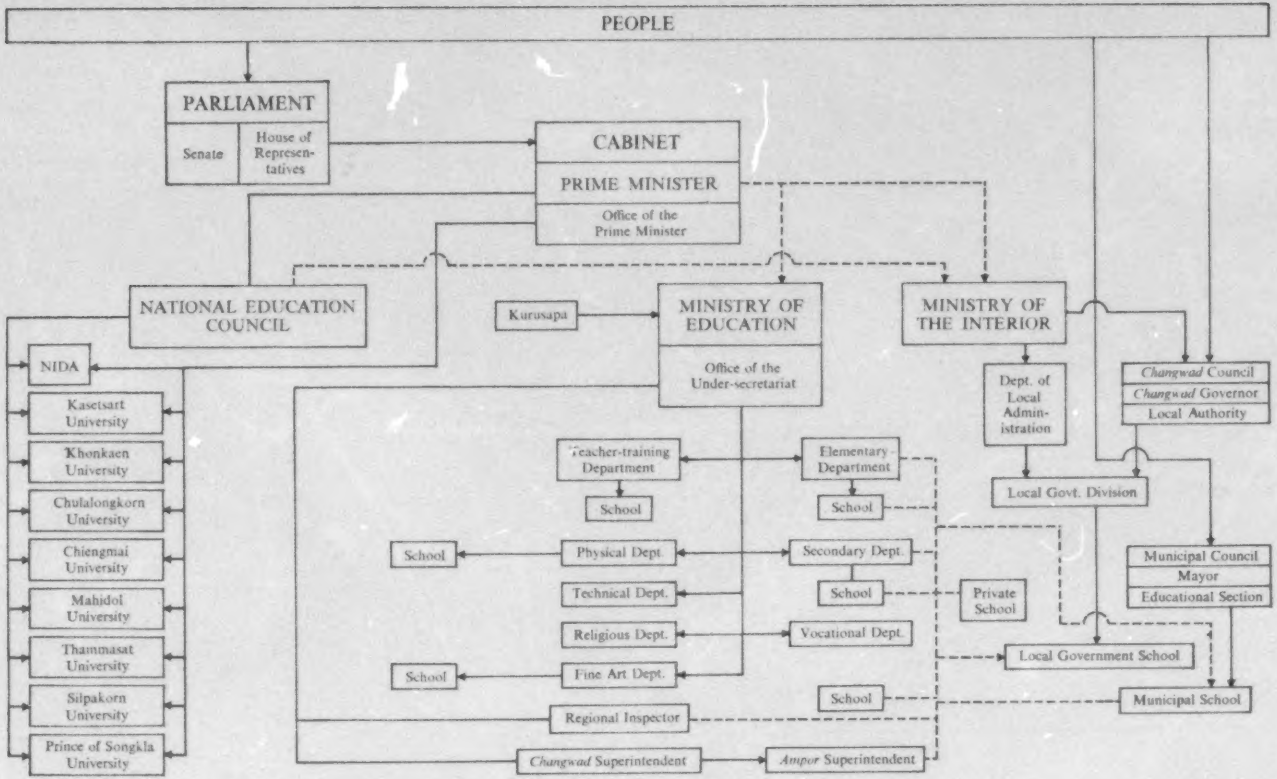

FIGURE 1. *Chart of educational administration.*

TABLE 1. Production in value of the major commercial agricultural crops, 1960-69 (millions of baht)

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Paddy rice	6 879.9	8 736.1	9 586.1	8 878.6	7 985.7	10 888.1	16 152.5	13 150.2	12 507.0	12 937.2
Rubber	1 670.6	1 320.1	1 267.6	1 196.5	1 215.3	1 317.0	1 142.3	957.7	1 213.4	1 732.8
Coconut	281.1	313.0	265.8	344.6	459.7	386.5	283.7	418.0	381.0	495.6
Sugar cane	388.9	355.4	274.6	516.9	412.6	276.2	389.7	489.8	579.8	653.3
Maize and sorghum	384.5	442.3	440.9	630.9	747.4	904.4	1 090.3	1 117.9	1 065.9	1 658.6
Groundnut	447.5	221.0	231.3	236.1	264.6	315.5	348.7	275.7	271.8	294.5
Mung bean	90.7	92.3	123.4	249.5	198.2	209.2	285.4	308.6	284.8	293.0
Castor bean	75.4	39.2	56.3	71.3	52.9	37.3	52.4	80.1	91.8	85.5
Soy bean	42.2	54.9	53.8	50.1	57.3	45.9	77.4	79.7	77.5	122.7
Cassava	294.4	726.4	623.9	417.0	547.7	504.8	657.6	518.8	500.0	644.0
Tobacco	665.3	513.3	448.9	467.9	611.2	519.0	741.3	711.7	754.3	778.6
Cotton	158.8	120.0	115.5	126.8	171.1	172.8	265.2	298.8	358.5	365.9
Kenaf, jute and remie	493.8	427.1	287.1	340.0	595.8	1 028.0	1 111.9	509.4	460.6	618.3
Kapok	240.9	128.8	176.4	196.8	216.1	193.9	165.2	139.6	148.4	162.6
Sesame	75.0	39.1	47.9	63.3	55.7	72.3	80.1	94.4	90.6	81.3
Garlic, onion, shallot and chili	608.1	631.0	611.0	820.0	724.4	872.0	1 384.5	1 193.2	1 282.2	1 529.6
Vegetables	210.9	285.3	361.9	548.5	492.3	569.5	1 000.7	1 110.9	1 228.2	1 494.1
Fruit	2 488.7	2 563.4	2 539.0	2 664.6	2 879.9	3 081.1	3 289.3	3 545.1	3 605.2	4 584.0
Other crops	167.3	150.2	162.1	171.5	174.5	203.8	270.9	246.8	243.3	303.3
TOTAL	15 664.0	17 158.9	17 673.5	17 990.9	17 862.4	21 597.3	28 789.1	25 246.4	25 344.3	28 834.9

SOURCE NEDB

TABLE 2. Major industrial production in value, 1960–69 (millions of baht)

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Food	2 308.9	2 883.0	3 384.9	3 480.8	3 303.0	3 516.2	3 909.3	4 553.1	4 524.9	4 645.6
Beverages	583.4	653.8	896.5	918.6	976.8	1 041.2	1 264.3	1 417.2	1 542.9	1 739.0
Tobacco and snuff	981.1	1 030.1	1 149.1	1 173.3	1 207.7	1 194.4	1 343.1	1 510.0	1 647.7	1 697.5
Textiles	318.6	389.8	444.6	572.2	698.4	817.3	898.0	999.9	1 111.1	1 261.5
Clothes and made-up textiles	536.1	529.3	565.3	568.1	638.9	665.7	846.0	961.5	1 081.6	1 205.3
Wood and cork	256.7	244.3	316.4	421.8	459.8	524.2	497.4	571.3	645.0	679.0
Furniture and fixtures	92.2	99.2	104.9	115.9	133.8	161.4	251.6	290.8	367.7	459.1
Paper and paper products	18.4	16.4	14.0	23.7	29.3	47.0	52.3	52.7	54.3	68.4
Printing, publishing and allied industries	266.1	292.8	309.4	321.0	392.7	412.9	461.1	518.0	528.5	587.9
Leather and leather products (except footwear)	31.6	23.9	25.7	30.2	29.6	32.3	40.8	47.4	51.6	51.8
Rubber and rubber products	56.0	60.8	65.3	71.2	69.8	121.6	140.2	153.7	181.9	212.0
Chemicals and chemical products	491.1	524.2	534.5	605.0	695.7	752.3	778.9	927.0	1 069.6	1 217.7
Petroleum refining and coal	2.5	1.4	1.3	1.7	139.1	751.5	1 094.4	1 153.4	1 376.4	1 167.5
Non-metallic mineral products	268.5	381.5	466.9	519.0	563.4	624.4	791.1	945.1	1 120.9	1 273.1
Basic metal industries	26.5	28.9	32.0	28.7	36.8	51.7	63.5	74.0	130.0	156.6
Metal products (excluding machinery and transport)	51.1	64.2	83.9	98.8	116.8	146.0	176.1	205.7	246.8	302.4
Repairing of non-electrical machinery	36.2	43.1	59.7	78.7	101.6	137.2	184.3	243.2	271.6	340.9
Electrical machinery and supplies	40.8	45.9	55.9	67.2	80.9	99.4	126.1	155.8	183.2	221.9
Transport equipment	328.7	346.1	418.8	476.7	657.6	742.8	819.8	1 067.3	1 177.6	1 250.0
Miscellaneous	64.7	68.3	68.0	79.9	103.4	138.2	171.7	210.7	272.3	347.8
TOTAL	6 759.2	7 727.0	8 907.1	9 652.6	10 435.1	11 977.7	13 910.0	16 057.8	17 585.6	19 185.0

SOURCE NEDB

TABLE 3. Uses of GNP in current prices, 1965-69 (millions of baht)

	1965	1966	1967	1968	1969
Consumption expenditures	66 907.5	75 951.1	85 704.1	94 831.2	104 201.9
Private	58 573.6	66 662.7	75 006.5	81 697.0	89 489.4
Government	8 333.9	9 288.4	10 697.6	13 134.2	14 712.5
Gross fixed capital formation	15 985.5	20 364.1	24 788.6	27 814.3	30 859.9
Private	10 542.0	13 626.3	16 602.9	18 489.7	21 213.1
Government	5 443.5	6 737.8	8 185.7	9 324.6	9 646.8
Change in stocks	1 026.3	3 543.7	−105.5	578.0	3 140.6
Expenditures on consumption and gross capital formation	83 919.3	99 858.9	110 387.2	123 223.5	138 202.4
Plus: Exports of goods and services	15 386.6	19 341.9	21 398.9	21 596.3	22 206.0
Expenditures on gross domestic product and imports	99 305.9	119 200.8	131 786.1	144 819.8	160 408.4
Less: Imports of goods and services	−16 488.0	−19 706.0	−23 803.0	−26 370.0	−27 931.0
Statistical discrepancy	1 485.1	1 795.5	241.7	−1 141.1	−1 864.7
Expenditures on gross domestic product	84 303.0	101 290.3	108 224.8	117 308.7	130 612.7
Plus: Net income from abroad	−11.1	−8.2	167.5	272.2	226.0
Expenditures on gross national product at current prices	84 291.9	101 282.1	108 392.3	117 580.9	130 838.7

SOURCE National Accounts Division, office of the National Economic Development Board.

TABLE 4. Gross fixed capital formation by sector at current prices, 1960-69 (millions of baht)

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Construction	4 525.1	5 025.6	6 085.6	6 985.4	7 929.6	8 762.9	11 053.0	12 953.0	14 723.3	16 658.4
Private	3 140.6	3 499.4	4 031.5	4 303.0	4 970.3	5 317.5	6 691.4	7 279.0	8 282.9	9 826.5
Residential	1 772.0	2 089.4	2 177.7	2 372.2	2 567.9	2 724.1	3 067.9	3 402.7	3 660.0	3 824.8
Non-residential	1 039.7	1 074.6	1 270.2	1 490.1	1 942.8	2 071.5	3 090.9	3 230.0	3 934.9	5 272.7
New lands	328.9	335.4	583.6	440.7	459.6	521.9	532.6	646.3	688.0	729.0
Public	1 384.5	1 526.2	2 054.1	2 682.4	2 959.3	3 445.4	4 361.6	5 674.0	6 440.4	6 831.9
Residential	63.0	52.1	62.1	168.7	148.9	218.0	297.8	238.8	334.5	368.9
Non-residential	265.5	330.8	397.6	600.9	710.6	823.6	1 063.1	886.9	1 025.8	1 270.7
Other construction	1 056.0	1 143.3	1 594.4	1 912.8	2 099.8	2 403.8	3 000.7	4 548.3	5 080.1	5 192.3
Machinery and equipment	3 029.5	3 289.1	4 007.2	5 099.5	6 588.9	7 222.6	9 311.1	11 835.6	13 091.0	14 201.5
Transport equipment	1 277.8	1 119.3	1 392.4	1 775.6	2 400.7	2 392.3	3 219.1	4 117.5	4 218.2	4 546.5
Motor vehicles	935.9	879.0	1 119.3	1 509.0	1 825.3	1 857.0	2 523.5	3 220.0	3 331.3	3 719.0
Other equipment	341.9	240.3	273.1	266.6	575.4	535.3	695.6	897.5	886.9	827.5
Machinery and other equip.	1 751.7	2 169.8	2 614.8	3 323.9	4 188.2	4 830.3	6 072.0	7 718.1	8 872.8	9 655.0
Industrial machinery and appliances	675.0	855.6	979.6	1 438.9	1 816.5	2 101.4	2 550.8	3 216.0	3 401.6	3 619.6
Office and other equip.	1 076.7	1 314.2	1 635.2	1 885.0	2 371.7	2 728.9	3 541.2	4 502.1	5 471.2	6 035.4
GFCF	7 554.6	8 314.7	10 092.8	12 084.9	14 518.5	15 985.5	20 364.1	24 788.6	27 814.3	30 859.9

SOURCE: NESB

TABLE 5. Government revenue by calendar years, 1962-70 (thousands of baht)

	1962	%	1963	1964	1965
Taxation	7 434 840	92.04	8 059 583	9 296 865	10 387 224
Income tax	728 253	9.02	792 460	893 794	1 134 541
Personal	450 437	5.58	471 997	536 801	642 084
Corporation	277 816	3.44	320 463	356 993	492 457
General sales taxes	1 513 008	18.73	1 581 568	1 856 311	2 102 041
Business tax	1 455 364	18.02	1 527 352	1 796 440	2 038 595
Stamp duty	57 644	0.71	54 216	59 871	63 446
Selective sales taxes	929 996	11.51	978 618	1 224 669	1 777 787
Domestic commodities	765 415	9.48	798 470	988 266	1 453 430
Natural resources	164 581	2.04	180 148	236 403	324 357
Customs duty	3 619 660	44.81	3 943 614	4 448 749	4 400 004
Export	1 098 177	13.60	1 163 515	1 609 002	1 569 526
1. Export duties	345 558	4.28	344 994	371 093	377 543
2. Rice export premium	752 619	9.32	818 521	1 237 909	1 191 983
Import	2 521 483	31.22	2 780 099	2 839 747	2 830 478
1. Import duties	2 521 483	31.22	2 780 099	2 829 959	2 819 025
2. Gold import license fees	—	—	—	9 788	11 453
License tax	228 029	2.82	255 137	265 635	288 685
Other taxes	415 894	5.15	508 186	607 707	684 166
Sales and charges	280 389	3.47	252 159	275 420	327 559
Gov't enterprises	178 079	2.21	313 841	127 629	231 602
Other incomes	184 402	2.28	254 498	320 156	522 375
Repayment from coin making	—	—	—	—	−81 098
Loan refunds	—	—	—	—	−43 656
GRAND TOTAL	8 077 710		8 880 081	10 020 070	11 344 006

SOURCE NEDB

1966	%	1967	1968	1969	1970	%
11 844 376	91.72	13 569 574	15 406 422	16 803 496	17 065 538	90.42
1 292 849	10.01	1 494 901	1 755 171	2 032 234	2 200 184	11.66
701 699	5.43	845 417	978 721	1 182 141	1 297 614	6.88
591 150	4.58	649 484	776 450	850 093	902 570	4.78
2 585 298	20.02	3 014 991	3 271 681	3 524 808	3 822 291	20.25
2 505 333	19.40	2 917 738	3 154 703	3 408 124	3 697 591	19.59
79 965	0.62	97 253	116 978	116 684	124 700	0.66
2 043 531	15.83	2 337 384	2 554 907	2 943 060	3 323 083	17.61
1 664 222	12.89	1 981 706	2 197 546	2 571 937	2 924 211	15.49
379 309	2.94	355 678	357 361	371 123	398 872	2.11
4 856 589	37.61	5 603 544	6 542 465	6 941 939	6 251 743	33.12
1 360 896	10.54	1 318 229	1 568 942	1 505 339	847 874	4.49
365 630	2.83	323 716	302 055	467 910	307 490	1.63
995 266	7.71	994 513	1 266 887	1 037 429	540 384	2.86
3 495 693	27.07	4 285 315	4 973 523	5 436 600	5 403 869	28.63
3 485 597	26.99	4 272 135	4 959 961	5 427 656	5 396 350	28.59
10 096	0.08	13 180	13 562	8 944	7 519	0.04
313 899	2.43	333 201	364 611	343 256	375 326	1.99
752 210	5.83	785 554	917 587	1 018 199	1 092 911	5.79
354 238	2.74	366 102	426 294	412 359	482 951	2.56
283 571	2.20	461 371	566 822	616 947	622 692	3.30
665 362	5.15	720 551	887 019	929 895	1 047 311	5.55
−90 606	−0.70	−33 185	−103 652	−67 570	−75 900	−0.40
−144 358	−1.12	−215 335	−300 066	−344 867	−269 244	−1.43
12 912 583		14 869 078	16 882 839	18 350 260	18 873 348	

TABLE 6. Gross domestic product at factor cost by industry and national income, 1960-69 (millions of baht)

Industrial origin	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Agriculture	21 355.8	22 989.4	23 575.0	24 424.4	24 859.7	29 219.4	36 807.4	34 951.2	36 753.7	41 468.3
Crops	15 600.2	17 084.7	17 610.8	17 904.0	17 775.2	21 504.7	28 666.4	25 184.8	25 217.7	28 700.1
Livestock	2 972.6	3 001.3	3 099.2	3 244.5	3 374.5	3 659.1	3 865.4	4 420.6	5 000.5	5 049.3
Fisheries	972.3	1 033.5	960.8	1 239.7	1 573.4	1 627.9	1 970.4	2 744.3	3 573.8	4 569.3
Forestry	1 810.7	1 869.9	1 904.2	2 036.2	2 136.6	2 427.7	2 305.2	2 601.5	2 961.7	3 149.7
Mining and quarrying	479.3	578.0	640.5	665.4	1 064.4	1 493.9	1 618.5	1 758.2	1 816.8	2 173.5
Manufacturing	5 576.5	6 461.9	7 407.1	7 903.8	8 345.6	9 302.7	10 747.8	12 349.0	13 514.3	13 282.4
Construction	2 444.0	2 657.5	3 228.4	3 587.7	4 129.1	4 646.6	6 086.4	7 289.0	8 062.2	8 500.8
Electricity and water supply	225.6	302.4	374.4	423.1	523.5	668.0	891.4	1 077.2	1 302.7	1 555 8
Transportation and communication	3 955.0	4 153.4	4 516.3	4 656.6	5 322.3	5 824.4	6 138.8	6 610.7	7 105.5	7 726.0
Wholesale and retail trade	4 326.0	4 775.2	5 330.4	6 131.8	7 871.7	8 260.9	10 757.4	11 701.9	11 931.6	15 422.2
Banking, insurance and real estate	894.4	1 074.4	1 365.2	1 507.9	1 776.3	2 064.0	2 595.2	3 163.7	3 751.0	4 478.9
Ownership of dwellings	1 459.4	1 515.6	1 623.5	1 678.2	1 797.7	1 930.7	2 039.0	2 160.6	2 238.2	2 355.6
Public administration and defence	2 493.3	2 648.5	2 847.5	3 149.5	3 301.3	3 589.2	3 814.2	4 286.6	4 991.1	5 565.0
Services	4 966.0	5 340.8	5 882.7	6 281.8	6 849.0	7 577.9	8 746.7	10 164.7	11 510.4	12 718.0
Gross domestic product at factor cost	48 175.3	52 497.1	56 791.0	60 430.0	65 840.6	74 577.7	90 242.7	95 512.8	102 977.5	115 246.5
Net factor income payment from the rest of the world	−99.1	−93.3	−98.4	−40.4	−78.7	−11.1	−8.2	+167.5	+272.2	+226.0
Gross national product at factor cost	48 076.2	52 403.8	56 692.6	60 389.6	65 761.9	74 566.6	90 234 5	95 680.3	103 249.7	115 472.5
Provision for consumption of fixed capital	−1 627.7	−1 950.7	−2 360.0	−2 893.5	−3 558.8	−4 245.5	−5 184.4	−6 305.3	−7 541.7	−8 880.2
NATIONAL INCOME	46 448.5	50 453.1	54 332.6	57 496.1	62 203.1	70 321.1	85 050.1	89 375.0	95 708.0	106 592.3

SOURCE NEDB

TABLE 7. Public capital expenditure by function, 1960-69 (millions of baht)

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
General administration	1 602.2	1 724.2	2 025.4	2 391.2	2 583.6	3 056.3	3 387.7	3 843.9	4 496.3	5 388.6
Economic investment										
Agricultural machinery and equipment	124.8	168.3	171.5	274.6	354.7	379.1	504.0	683.4	510.0	601.3
Transport and communication facilities	144.4	161.7	219.5	276.0	331.0	366.9	428.3	510.4	686.7	741.9
Building materials	872.3	955.1	1 069.7	1 332.5	1 102.0	1 338.0	1 721.2	1 958.9	1 883.2	2 054.5
Electric equipment and apparatus	152.0	168.3	230.4	260.7	283.4	352.8	410.3	519.6	812.4	791.7
Machinery, engines, tools and implements	489.5	592.8	744.4	931.2	1 194.4	1 377.9	1 765.2	2 105.3	2 400.8	2 495.5
Industrial raw materials	195.0	299.3	331.8	375.6	520.9	520.8	704.6	947.2	1 078.0	1 212.7
Other investment										
Education and research	1 284.5	1 347.1	1 480.2	1 505.1	1 605.1	1 667.7	1 848.3	2 078.3	2 450.1	2 681.2
Health services	208.8	216.8	232.1	260.7	290.9	308.4	343.1	397.8	475.2	506.9
Special welfare services	22.1	28.0	38.7	38.4	45.9	56.4	61.5	73.5	84.9	86.8
Other services	72.3	66.8	41.1	33.1	24.4	22.4	30.9	33.5	38.9	42.1
TOTAL	5 167.9	5 728.4	6 584.8	7 679.1	8 336.3	9 446.7	11 205.1	13 151.8	14 916.5	16 603.2

SOURCE NEDB

TABLE 8. Rates of saving (domestic and national) at current prices, 1960-69 (millions of baht)

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
GDP	53 984.0	58 970.0	63 793.0	68 078.6	74 667.3	84 303.0	101 374.7	108 224.3	117 306.7	130 612.7
Private consumption expenditure in the domestic market	39 174.8	42 393.9	46 599.2	49 735.7	53 393.2	58 423.8	66 929.3	75 502.9	82 078.6	90 009.4
General government consumption expenditure	5 342.0	5 626.1	6 279.7	6 923.5	7 477.8	8 333.9	9 288.4	10 697.6	13 134.2	14 712.5
Sub-total	44 516.8	48 020.0	52 878.9	56 659.2	60 871.0	66 757.7	76 217.7	86 200.5	95 212.8	104 721.9
Domestic saving	9 467.2	10 950.0	10 914.1	11 419.4	13 796.3	17 545.3	25 157.0	22 023.8	22 093.9	25 890.8
(Domestic saving ratio)	(0.1754)	(0.1857)	(0.1711)	(0.1677)	(0.1848)	(0.2081)	(0.2482)	(0.2035)	(0.1883)	(0.1982)
GNP	53 884.9	58 876.7	63 694.6	68 038.2	74 588.6	84 291.9	101 366.5	108 391.8	117 578.9	130 838.7
Private consumption expenditure	39 327.8	42 491.9	46 752.0	49 884.3	53 613.0	58 573.6	66 662.7	75 006.5	81 697.0	89 489.4
General gov't consumption expenditure	5 342.0	5 626.1	6 279.7	6 923.5	7 477.8	8 333.9	9 288.4	10 697.6	13 134.2	14 7,2.5
Sub-total	44 669.8	48 118.0	53 031.7	56 807.8	61 090.8	66 907.5	75 951.1	85 704.1	94 831.2	104 201.9
National saving	9 215.1	10 758.7	10 662.9	11 230.4	13 497.8	17 384.4	25 415.4	22 687.7	22 747.7	26 636.8
(National saving ratio)	(0.1710)	(0.1827)	(0.1674)	(0.1651)	(0.1810)	(0.2062)	(0.2507)	(0.2093)	(0.1935)	(0.2036)

SOURCE NEDB

TABLE 9. Domestic capital account at current prices, 1960-69 (millions of baht)

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969
Gross domestic fixed capital formation	7 554.6	8 314.7	10 092.8	12 084.9	14 618.5	15 985.5	20 364.1	24 788.6	27 814.3	30 859.9
Increase in stocks	902.6	603.9	1 644.2	2 534.9	469.3	1 026.3	3 543.7	−105.5	578.0	3 140.6
GROSS CAPITAL FORMATION	8 457.2	8 918.6	11 737.0	14 619.8	15 087.8	17 011.8	23 907.8	24 683.1	28 392.3	34 000.5
Provision for the consumption of fixed capital	1 627.7	1 950.7	2 360.0	2 893.5	3 558.8	4 245.5	5 184.4	6 305.3	7 541.7	8 880.2
Saving of corporations and government enterprises	423.7	538.9	662.9	819.7	1 296.5	1 277.8	1 783.3	2 258.6	2 590.5	2 728.8
Saving of households and private non-profit institutions	6 106.4	6 907.1	6 341.0	6 077.4	6 657.6	9 600.0	15 768.0	10 923.4	10 044.3	12 820.4
Saving of general governments	1 827.6	1 908.0	2 209.9	2 578.0	2 760.0	3 057.5	3 657.4	4 398.6	4 118.7	3 457.8
Surplus of the nation on current account	71.8	−597.0	543.3	1 292.6	552.9	316.1	−610.4	1 038.9	2 954.0	4 248.6
Statistical discrepancy	−1 600.0	−1 789.1	−380.1	958.6	262.0	−1 485.1	−1 879.9	−241.7	1 143.1	1 864.7
FINANCE OF GROSS DOMESTIC CAPITAL FORMATION	8 457.2	8 918.6	11 737.0	14 619.8	15 087.8	17 011.8	23 907.8	24 683.1	28 392.3	34 000.5

SOURCE NEDB

TABLE 10. Distribution of the labour force by main sectors

Economic sector	1954[1]		1960[2]		1966[3]		1971[3]	
	Number	%	Number	%	Number	%	Number	%
Agriculture	8 971 600	88.2	10 341 857	83.0	11 618 752	79.8	12 675 498	75.6
Mining and quarrying	19 200	0.2	28 443	0.2	41 486	0.3	51 322	0.3
Manufacturing	212 520	2.1	454 807	3.6	689 134	4.7	982 143	5.9
Construction	28 440	0.3	68 260	0.6	110 687	0.8	164 247	1.0
Electricity, gas, water, etc	4 680	—	15 454	0.1	33 249	0.2	57 548	0.3
Transport & communications	84 520	0.8	164 142	1.3	228 949	1.6	324 830	1.9
Commerce	463 240	4.5	744 424	6.0	1 027 574	7.1	1 368 792	8.2
Services	393 080	3.9	643 595	5.2	804 304	5.5	1 139 818	6.8
TOTAL	10 177 280[4]	100.0	12 460 982[4]	100.0	14 554 135	100.0	16 764 198	100.0

1. 1954 demographic and economic survey
2. 1960 census
3. NEDB estimates
4. Not including a small number of unclassified persons

SOURCE NEDB

TABLE 11. Composition of imports, 1960-69 (millions of baht)

	1960		1961		1962		1963	
	Amount	%	Amount	%	Amount	%	Amount	%
Consumer goods	3 365	35.0	3 603	31.4	3 666	31.9	3 679	28.7
Intermediate products and raw material	1 746	18.1	1 987	17.2	1 968	17.1	2 197	17.2
Capital goods	2 367	24.6	2 548	22.2	3 248	28.1	4 056	31.7
Vehicles	755	7.8	801	7.0	1 017	8.9	1 287	10.1
Miscellaneous	1 389	14.5	2 548	22.2	1 605	14.0	1 584	12.3
TOTAL	9 622	100.0	11 487	100.0	11 504	100.0	12 803	100.0

	1964		1965		1966		1967	
	Amount	%	Amount	%	Amount	%	Amount	%
Consumer goods	3 933	27.6	4 163	27.0	4 714	25.5	5 335	24.0
Intermediate products and raw material	2 786	19.5	3 210	20.8	3 941	21.3	4 737	21.3
Capital goods	4 242	29.8	4 775	30.9	5 701	30.8	7 543	34.0
Vehicles	1 454	10.2	1 839	11.9	2 361	12.7	2 770	12.5
Miscellaneous	1 838	12.9	1 446	9.4	1 787	9.7	1 80[illegible]	8.2
TOTAL	14 253	100.0	15 433	100.0	18 504	100.0	22 188	100.0

	1968		1969	
	Amount	%	Amount	%
Consumer goods	5 323	22.1	5 908	22.8
Intermediate products and raw material	5 086	21.1	5 866	22.6
Capital goods	8 339	34.6	9 172	35.3
Vehicles	2 523	10.5	2 523	9.7
Miscellaneous	2 832	11.7	2 497	9.6
TOTAL	24 103	100.0	25 966	100.0

SOURCE Bank of Thailand.

TABLE 12. Repayment schedule of external debt, 1970-80 (millions of dollars)

	Actual 1970	Actual 1971	Projection								
			1972	1973	1974	1975	1976	1977	1978	1979	1980
Capital repayment (total)	22.05	24.90	23.23	31.32	32.52	38.22	53.07	62.99	70.11	78.52	82.17
Direct government	7.29	9.14	7.97	9.94	11.54	13.64	22.03	28.74	32.43	37.02	40.41
Government guarantee	14.76	15.76	15.26	21.38	20.98	24.58	31.04	34.25	37.68	41.50	41.76
Interest (total)	15.19	21.01	23.11	31.98	37.95	45.10	44.46	41.90	39.17	36.43	33.98
Direct government	8.69	11.74	9.87	14.49	18.95	23.69	23.48	22.66	21.59	20.52	19.70
Government guarantee	6.50	10.27	13.24	17.49	19.00	21.41	20.98	19.24	17.58	15.91	14.28
Total external debt & repayment	37.24	45.91	46.34	63.30	70.47	83.32	97.53	104.89	109.28	114.95	116.15

SOURCE NEDB

TABLE 13A. Actual development expenditures during the second plan by source (millions of baht)

	1967	1968	1969	1970	1971[1]
Budget appropriation	7 473.79	8 384.31	9 403.91	11 008.02	11 059.97
Self-financed	1 307.53	1 812.46	2 101.19	2 330.35	2 410.85
Foreign loans	767.10	872.77	1 163.14	1 266.50	1 391.32
Foreign grants	729.83	978.07	883.36	612.07	577.79
TOTAL	10 278.25	12 047 61	13 551.60	15 216.94	15 439.93

TABLE 13B. Actual development expenditures during the second plan by function (millions of baht)

	1967	1968	1969	1970	1971[1]
Agriculture and irrigation	1 665.84	1 759.93	1 906.98	2 261.53	1 938.98
Industry, mining and commerce	330.30	348.82	407.60	380.32	354.47
Communications and transport	2 419.68	2 627.10	3 282.93	3 605.93	3 483.26
Power	688.26	1 017.70	1 127.51	1 470.44	1 739.82
Social development	273.33	244.80	274.91	418.36	415.37
Urban and rural development	1 388.48	1 401.16	1 332.39	1 597.93	1 335.93
Public health	552.71	575.86	579.10	681.16	849.80
Education	2 328.26	2 959.09	3 323.59	3 856.74	4 445.08
Others	631.39	1 113.15	1 316.59	944.53	877.22
TOTAL	10 278.25	12 047.61	13 551.60	15 216.94	15 439.93

1. Estimated figures.
NOTE: Development expenditure includes other than capital expenditure.

SOURCE NEDB

TABLE 14. Approved budgets and actual expenditure, 1963-70 (millions of baht)

	1963	1964	1965	1966	1967	1968	1969	1970
Approved budget	10 780.0	11 430.0	12 870.1	15 140.0	19 228.5	21 262.0	23 960.3	27 299.9
Actual capital exp.	2 263.0	2 598.0	3 590.0	4 201.0	5 797.0	5 000.0	6 464.0	7 931.0
Actual recurrent exp.	7 326.0	8 177.0	8 859.0	9 757.0	11 532.0	14 484.0	15 239.0	17 204.0
TOTAL	9 589.0	10 775.0	12 449.0	13 958.0	17 329.0	19 484.0	21 703.0	25 135.0
% of actual exp. for capital	23.60	24.11	28.84	30.10	33.45	25.66	29.78	31.55
% of approved budget actually spent	88.95	94.27	96.73	92.19	90.12	91.64	90.58	92.07

SOURCE Budget Bureau, Comptroller-General's Department and Bank of Thailand.

TABLE 15. Revenue of local authorities (baht)

Revenues	1969	1970
Taxes	185 893 789	253 629 839
Fees, license fees, fines	4 309 883	5 849 807
Rent from public properties and commercial benefit	9 153 828	11 684 263
Interest on gov't bonds	2 334 157	3 282 250
Others	5 972 413	25 615 060
Subsidies from central gov't for first-level education	1 784 217 455	2 159 717 563
Subsidies from central gov't for local authorities	6 700 000	5 000 000
Other subsidies	431 000	426 000
Cumulative saving	5 898 435	8 614 904
TOTAL	2 004 910 960	2 473 819 686

SOURCE Department of Local Administration, Ministry of the Interior.

TABLE 16. Expenditure of local authorities by function (baht)

Expenditure	1969	1970
Salaries	12 381 374	15 946 000
Wages	5 765 272	10 656 957
Renumeration	8 245 567	11 323 634
Ordinary expenses	37 205 543	50 457 623
Materials & supplies	16 247 563	27 163 231
Equipments	11 657 216	18 593 429
Land & structure	58 711 614	84 540 707
Others	25 045 649	25 438 154
Educational subsidies	1 784 217 455	2 159 717 563
District subsidies	6 700 000	5 000 000
Other subsidies	431 000	426 000
Unspent subsidies returned to Ministry of Finance	38 298 707	64 117 388
Cumulative saving	—	439 000
TOTAL	2 004 906 960	2 473 819 686

SOURCE Department of Local Administration.

TABLE 17. Municipal education account, 1965-70 (thousands of baht)

	1965	1966	1967	1968	1969	1970
Total municipal resources	788 842	813 148	884 803	896 377	902 238	893 913
of which subsidy	205 061	263 574	168 192	234 815	164 701	167 862
of which own resources	583 781	549 574	716 611	661 562	737 537	726 051
Total municipal educational expenditure	81 086	111 611	143 141	156 310	172 287	199 104
of which subsidy	50 362	54 901	56 585	82 200	83 390	108 385
of which own resources	30 724	56 710	86 556	74 110	88 897	90 719
% of municipal resources to education	5.3	10.3	12.1	11.2	12.1	12.4
% of ed. exp. from own resources	35.4	50.8	60.5	47.4	51.6	45.6

SOURCE Department of Local Administration.

TABLE 18. Percentages of provincial income used for education

Year	Total no. of replies	Percentages					
		0-4.9	5-9.9	10-14.9	15-29.9	30-49.9	50-100
1969	53	19	14	12	5	1	2
1970	53	23	17	7	3	2	1
1971	53	18	16	13	2	3	1

SOURCE Department of Local Administration.

TABLE 19. First-level school enrolment, 1960-71

	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
P1	1 336 521	1 322 855	1 307 772	1 339 800	1 285 553	1 301 045	1 356 004	1 421 710	1 437 990	1 461 841	1 481 930	1 488 304
P2	880 034	947 985	965 831	969 079	1 083 562	1 050 018	1 058 916	1 102 289	1 135 841	1 167 508	1 174 094	1 176 005
P3	747 812	788 816	852 533	868 067	914 867	991 605	986 198	996 486	1 035 558	1 040 148	1 104 469	1 099 962
P4	605 228	657 313	678 038	728 066	777 400	803 784	870 665	868 850	862 776	874 166	932 343	952 628
P1-4	3 569 595	3 716 969	3 804 174	3 905 012	4 061 382	4 146 452	4 271 783	4 389 335	4 472 165	4 543 663	4 692 836	4 716 899
P5	137 850	137 054	138 629	156 459	180 422	195 322	212 193	242 261	265 579	288 823	390 504	395 397
P6	121 050	126 185	122 763	122 849	144 245	158 976	172 231	195 878	214 906	237 431	287 912	321 193
P7	107 054	112 714	115 022	106 915	114 325	129 674	143 794	164 619	171 575	198 726	232 947	263 474
P5-7	365 954	375 953	376 414	386 223	438 992	483 972	528 218	602 758	652 060	724 980	911 363	980 064
TOTAL	3 935 549	4 092 922	4 180 588	4 291 235	4 500 374	4 630 324	4 800 001	4 992 093	5 124 225	5 268 643	5 604 199	5 696 963

SOURCE Educational Planning Division, Ministry of Education.

TABLE 20. Drop-out and repeater rates at first-level school by grades and years

Year	Drop-out Rates					Repeater rates						
	P1/2	P 2/3	P3/4	P 5/6	P 6/7	P 1	P 2	P 3	P 4	P 5	P 6	P 7
1963/64	3.5	0.9	3.1	5.3	4.3	23.0	10.1	6.1	—	7.6	6.5	3.7
1964/65	5.9	3.2	3.9	7.0	5.1	20.5	9.6	5.2	—	10.5	6.9	2.6
1965/66	5.0	2.9	3.5	9.0	6.5	23.4	12.2	9.5	1.0	9.7	8.1	5.4
1966/67	5.8	2.6	4.1	2.0	—	23.2	13.2	10.6	3.2	13.2	9.3	6.3
1967/68	5.0	3.0	4.0	7.0[2]	5.0[2]	23.0	10.7	8.5	—	11.0[2]	8.2	1.2
1968/69	5.0[1]	3.0[1]	4.0[1]	7.0[2]	5.0[2]	23.0[1]	12.2	7.4	—	11.0[2]	8.3	8.1
1969/70[1]	5.0	3.0	4.0	7.0	5.0	23.0	12.0	8.0	—	11.0	9.0	6.0
1970/71[1]	5.0	3.0	4.0	7.0	5.0	23.0	12.0	8.0	—	11.0	9.0	6.0
1971/72[1]	5.0	3.0	4.0	6.5	5.0	23.0	12.0	8.0	—	10.0	9.0	6.0

1. Estimate.
2. It appeared likely that the 1967 enrolment statistics were higher than the actual figures and reflected some over-estimation.

TABLE 21. Gross progression rates P1-P7 (1964/65-1971/72)

Grade	1964/65	1966/67	1968/69	1971/72
P1 - 2	0.817	0.813	0.812	0.815
P2 - 3	0.915	0.941	0.916	0.921
P3 - 4	0.879	0.881	0.845	0.880
P4 - 5	0.251	0.278	0.335	0.400
P5 - 6	0.881	0.923	0.894	0.909
P6 - 7	0.899	0.756	0.925	0.912

SOURCE Educational Planning Division.

TABLE 22. Enrolment in general and vocational second-level education, 1961-71

	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
General second-level (pub. + priv.)	270 592	294 465	302 832	310 864	319 101	334 235	365 540	396 016	445 116	505 528	571 775
MS1	93 727	96 615	95 638	94 018	99 629	109 342	120 302	134 378	156 024	178 399	199 447
MS2	75 905	85 418	85 414	88 175	88 295	92 920	101 093	114 370	126 451	146 518	167 669
MS3	66 448	72 928	80 615	81 093	83 061	82 972	97 861	96 867	110 716	120 898	139 756
Sub-total MS1-3	236 080	254 961	261 667	263 286	270 985	285 234	319 256	345 615	393 191	445 815	506 872
MS4	22 091	24 809	27 494	29 668	30 269	30 397	31 836	30 815	32 635	36 508	40 114
MS5	12 421	14 965	13 671	17 910	17 847	18 604	18 448	19 586	19 290	23 205	24 789
Sub-total MS4-5	34 512	39 774	41 165	47 578	48 116	49 001	50 284	50 401	51 925	59 713	64 903
Vocational second-level (public only)	17 546	10 892	33 604	33 300	38 514	42 095	47 776	49 059	52 897	58 217	93 585
MS1	186	109	1 588	1 897	1 859	1 642	2 285	1 710	1 253	1 305	1 794
MS2	174	114	1 864	1 472	1 589	1 710	2 005	1 459	1 313	1 325	1 497
MS3	306	119	2 629	1 747	1 315	1 481	2 181	1 302	1 406	1 201	1 430
Sub-total MS1-3	666	342	6 081	5 116	4 763	4 833	6 471	4 471	3 972	3 831	4 721
MS4	4 198	2 468	11 068	12 414	15 707	16 613	17 218	18 473	18 194	23 994	39 215
MS5	6 105	3 302	8 468	9 233	10 479	13 054	14 137	13 674	16 112	16 140	27 762
MS6	6 577	4 780	7 987	6 537	7 565	7 595	9 950	12 441	14 619	14 252	21 887
Sub-total MS3-6	16 880	10 550	27 523	28 184	33 751	37 262	41 305	44 588	48 925	54 386	88 864
GRAND TOTAL	288 138	305 357	336 436	344 164	357 615	376 330	417 316	445 075	498 013	563 745	665 360
Sub-total MS1-3 gen. + voc.	236 746	255 303	267 748	268 402	275 748	290 067	315 727	350 086	397 163	449 646	511 593
Sub-total MS4-5 gen. + MS4-6 voc.	51 392	50 324	68 688	75 762	81 867	86 263	91 589	94 989	100 850	114 099	153 767

SOURCE Educational Planning Division.

TABLE 23. Drop-out, repeater and gross progression rates at second-level school by grades, 1963/64-1971/72

A. Drop-out and repeater rates by grade

Year	Drop-out						Repeater									
	Public			Private			Public					Private				
	MS1/MS2	MS2/MS3	MS4/MS5	MS1/MS2	MS2/MS3	MS4/MS5	MS1	MS2	MS3	MS4	MS5	MS1	MS2	MS3	MS4	MS5
1963/64	4.1	2.4	18.0	...	...	26.0	12.2	9.1	6.0	25.0	32.0	...	...	...	28.0	40.0
1964/65	5.7	2.5	24.0	...	...	32.0	7.4	6.7	1.2	32.0	34.0	...	...	...	33.0	40.0
1965/66	2.5	2.9	19.0	...	...	32.0	7.0	5.7	2.4	27.0	21.0	...	...	...	34.0	40.0
1966/67	8.9	1.9	18.0	...	...	18.0	10.0	12.6	8.2	28.0	10.0	...	...	...	44.0	35.0
1967/68	2.6	1.5	13.0	...	...	16.0	8.1	9.8	8.2	30.0	10.0	...	...	...	40.0	35.0
1968/69	3.0[1]	2.0	13.0	...	...	15.0	11.8	9.5	9.2	24.0	8.0	...	...	...	39.0	20.0
1969/70 est.	3.0	2.0	13.0	...	...	10.0	10.0	9.0	8.0	23.0	10.0	...	...	...	29.8	20.0
1970/71 est.	3.0	2.0	12.0	...	...	9.5	10.0	9.0	8.0	22.0	10.0	...	...	...	29.0	20.0
1971/72 est.	3.0	2.0	11.0	...	...	9.0	10.0	9.0	8.0	21.0	9.0	...	...	...	26.0	19.0

B. Gross progression rates, P7-MS3

Grade	1963/64	1965/66	1968/69	1969/70	1970/71	1971/72
P7-MS1	0.897	0.854	0.913	0.849	0.864	0.801
MS1-2	0.918	0.950	0.941	0.942	0.948	0.906
MS2-3	0.943	0.966	0.966	0.961	0.964	0.944
MS3-4	0.368	0.366	0.337	0.330	0.327	0.329
MS4-5 (public)	...	...	0.73	0.72	0.72	0.74
MS4-5 (private)	...	...	0.59	0.70	0.60	0.62
MS4-5 (total)	...	...	0.66	0.71	0.67	0.69

C. Drop-out and repeater rates in vocational school by grades and years

Year	Drop-out		Repeater		
	MS4/5	MS5/6	MS4	MS5	MS6
1963/64	10	2	26	24	15
1964/65	7	4	25	23	13
1965/66	10	12	15	12	2
1966/67	10	10	13	14	4
1967/68	10	8	16	7	4
1968/69	8	6	12	7	4
1969/70	10	6	15	7	3
1970/71[1]	9	6	12	7	3
1971/72[1]	8	5.5	12	6.5	3

1. Estimate

SOURCE Educational Planning Division.

TABLE 24. Drop-out and repeater rates at teacher-training level, 1964/65-1969/70

Year	Lower certificate			Higher certificate		
	Drop-out	Repeater		Drop-out	Repeater	
	Year 1-2	Year 1	Year 2	Year 1-2	Year 1	Year 2
1964/65	8	4	5	13	4	4
1965/66	8	4	4	12	4	15
1966/67	8	4	21	10	4	18
1967/68	8	4	12	10	4	16
1968/69	4	2	13	6	4	18
1969/70	2	2	17	2	2	23

SOURCE Educational Planning Division.

TABLE 25. Enrolment in teacher-training schools, 1961-71

Standards	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971
Total lower cert.	10 906	11 405	11 557	13 043	13 993	15 030	17 797	19 604	25 011	29 000	34 831
Lower certificate I	5 985	5 612	6 325	7 178	7 381	8 073	7 872	9 866	11 736	13 409	17 516
Lower certificate II	4 921	5 793	5 232	5 865	6 612	6 957	8 622	8 435	10 346	12 802	14 538
Primary teach. certificate	—	—	—	—	—	—	1 303	1 303	2 929	2 789	2 777
Total higher certificate	3 030	3 100	3 158	3 440	3 247	3 572	4 289	5 123	6 117	7 937	9 539
Higher certificate I	1 635	1 544	1 846	1 643	1 645	1 968	2 306	2 705	3 158	4 092	4 823
Higher certificate II	1 395	1 556	1 312	1 797	1 602	1 604	1 983	2 418	2 959	3 845	4 716
GRAND TOTAL	13 936	14 505	14 715	16 483	17 240	18 602	22 086	24 727	31 128	36 937	44 370

SOURCE Teacher-training Department.

TABLE 26. Number of classrooms in first-level schools and rate of utilization, 1961-70

	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
Number of classrooms	127 153	133 839	145 078	149 663	153 476	158 500	163 000	169 400	176 100	182 800
Enrolment	4 092 922	4 180 588	4 291 235	4 500 374	4 630 324	4 800 001	4 992 093	5 124 225	5 268 643	5 604 199
Pupil/classroom ratio	32.19	31.24	29.58	30.07	30.17	30.28	30.63	30.25	29.92	30.66

SOURCE Educational Planning Division.

TABLE 27. Total stock of teachers, 1964-68

Qualification	1964	1965	1966	1967	1968
Bachelor and above (16 years' education)	6 441	7 054	8 840	10 188	11 380
Higher cert. (14 years but less than 16 years)	22 528	25 986	29 311	32 014	37 631
Lower cert. (12 years but less than 14 years)	44 156	57 457	61 365	62 790	67 213
Other	68 776	67 240	67 246	67 735	67 168
TOTAL	141 901	157 737	166 762	172 727	183 392

SOURCE School and teacher census and educational report of the National Education Council.

TABLE 28. Enrolment in universities, 1969 (including post-graduates)

Departments	Kasetsart University		Khonkaen University		Chulalongkorn University		Chiengmai University		Mahidol University		Silpakorn University		Prince of Songkla University		NIDA		Thammasat University		Total	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B
Humanities	43	66	—	—	223	889	434	1 066	—	—	145	334	—	—	—	—	206	785	1 051	3 140
Education	—	2	94	94	383	1 888	99	377	—	—	—	—	69	127	—	—	—	—	645	2 488
Fine arts	—	—	—	—	70	433	—	—	—	—	93	431	—	—	—	—	—	—	163	864
Social sciences and law	236	788	—	—	913	3 562	432	1 066	—	—	—	—	—	—	—	748	2 003	10 936	3 584	17 100
Science	55	201	—	—	196	1 331	298	645	—	—	—	—	54	54	—	—	—	—	603	2 231
Engineering	106	337	124	411	372	1 697	—	—	—	—	—	—	54	155	—	—	—	—	666	2 600
Medical sciences	41	147	—	—	128	912	237	1 020	1 023	4 127	—	—	—	—	—	—	—	—	1 439	6 206
Agriculture	628	2 332	97	303	—	—	107	351	—	—	—	—	—	—	—	—	—	—	832	2 986
TOTAL	1 109	3 873	315	808	2 285	10 712	1 617	4 525	1 023	4 127	238	765	187	336	—	748	2 209	11 721	8 983	37 615

A = new entrants; B = total enrolment.

SOURCE: NEC

TABLE 29. Overseas training, 1964-69

Type of education	1964	1965	1966	1967	1968	1969
University	3 528	3 293	—	4 239	4 414	4 975
Lower than university	8 773	8 808	—	8 838	9 232	9 361
Training	80	175	—	131	125	...
Others	493	100	—	39	15	...
TOTAL	12 874	12 376	—	13 247	13 786	—

SOURCE The Civil Service Commission and Ministry of Foreign Affairs.

TABLE 30. University teaching staff, 1969

Department	Professors	Associate professors	Assistant professors	Special grade instructors	First grade instructors	Second grade instructors	Third grade instructors	Total	P/T Ratio
Humanities	10	2	16	5	98	193	76	400	7.85
Education	6	4	10	1	19	68	34	142	17.52
Fine arts	6	4	5	1	15	55	12	98	8.82
Social sciences & law	28	6	20	16	74	248	134	526	32.51
Science	7	4	9	4	44	134	87	289	7.72
Engineering	6	4	12	5	33	92	62	214	12.15
Medical sciences	68	22	62	40	313	751	125	1 381	4.49
Agriculture	—	—	—	9	50	184	55	298	10.02
TOTAL	131	46	134	81	646	1 725	585	3 348	11.24

SOURCE NEC

TABLE 31. Financing of educational expenditure, 1969-71 (baht)

A. First-level education

Functional units		Subsidies	%	Donations	%	Fees[1]	%	Local authority responsibility	%	Total
Ministry of Interior (Local authority)	1969	1 784 217 455	97.29	15 824 846	0.86	9 950 880	0.54	23 988 794	1.31	1 833 981 975
	1970	2 159 717 563	97.12	24 142 000	1.09	14 570 760	0.66	25 260 000	1.12	2 223 690 323
	1971	2 466 105 400	97.61	17 225 412	0.68	15 642 600	0.62	27 548 000	1.09	2 526 521 412
		Direct responsibility	%	Donations	%	Fees[1]	%			Total
Department of Elementary Education	1969	204 219 980	97.50	840 343	0.40	4 386 360	2.10	—		209 446 683
	1970	232 730 710	97.49	1 285 997	0.54	4 932 360	2.06	—		238 949 067
	1971	252 082 950	97.68	628 775	0.24	5 368 520	2.08	—		258 080 245
		Subsidies	%	Donations	%	Fees[1]	%	Municipal revenues	%	Total
Municipalities	1969	83 390 000	48.40	—		—		88 900 000	51.60	172 290 000
	1970	108 385 000[1]	54.44	—		—		90 720 000	45.56	199 105 000[1]
	1971	133 381 000	59.04	—		—		92 540 000[1]	40.96	225 921 000[1]
TOTAL	1969	2 071 827 435	93.51	16 665 189	0.75	14 337 240	0.65	112 888 794	5.09	2 215 718 658
	1970	2 500 833 273	93.95	25 427 997	0.96	19 503 120	0.73	115 980 000	4.36	2 661 744 390
	1971	2 851 569 350	94.72	17 854 187	0.59	21 011 120	0.70	120 088 000	3.99	3 010 522 657

[*continued*

TABLE 31 (continued).

B. Second-level (public) education

Functional units		Direct Cost	%	Donations	%	Fees	%	Total
Department of Secondary Education	1969	329 430 820	89.39	3 512 066	0.95	35 596 360[1]	9.66	368 539 246[1]
	1970	466 804 410	90.76	4 423 813	0.86	43 117 160[1]	8.38	514 345 383[1]
	1971	536 755 800	89.35	11 734 194	1.95	52 266 720[1]	8.70	600 756 714[1]
Department of Teacher Training	1969	159 869 700	78.09	47 000	0.02	44 809 821	21.89	204 726 521
	1970	233 868 900	75.65	411 022	0.13	74 857 417	24.22	309 137 339
	1971	286 502 900	73.88	360 251	0.09	100 932 000	26.03	387 795 151
Department of Vocational Education	1969	400 230 600	98.02	122 000	0.03	7 953 614	1.95	408 306 214
	1970	328 648 480	97.76	62 000	0.02	7 478 670	2.22	336 189 150
	1971	353 665 045	97.29	834 800	0.23	9 026 568	2.48	363 526 413
Fine arts schools	1969	30 996 700	99.07	11 400	0.03	277 190	0.90	31 285 290
	1970	41 893 110	99.22	12 600	0.03	314 712	0.75	42 220 422
	1971	35 723 100	98.95	12 600	0.05	361 164	1.00	36 096 864
Physical education college	1969	12 987 700	97.45	20 300	0.15	321 116	2.40	13 329 116
	1970	20 499 380	98.27	52 500	0.24	311 795	1.49	20 863 675
	1971	26 692 700	98.04	80 000	0.29	454 870	1.67	27 227 570
TOTAL	1969	933 515 520	90.97	3 712 766	0.36	88 958 101	8.67	1 026 186 387
	1970	1 091 714 280	89.28	4 961 935	0.41	126 079 754	10.31	1 222 755 969
	1971	1 239 339 545	87.56	13 021 845	0.92	163 041 322	11.52	1 415 402 712

TABLE 31 (continued).

C. Third-level education

Functional units		Government grant[1]	%	Donations	%	Fees	%	Own resources	%	Total
Universities	1969	525 864 000	94.26	2 847 502	0.51	28 001 831	5.02	1 187 512	0.21	557 900 845
	1970	654 568 000	94.48	1 419 498	0.21	27 222 924	3.93	9 589 358	1.38	692 799 780
	1971	769 840 000	100.00	—		—		—		769 840 000[2]
Ramkamhaeng	1969	—		—		—		—		—
	1970	—		—		—		—		—
	1971	25 000 000	60.08	—		15 415 760	37.06	1 191 000	2.86	41 606 760
TOTAL	1969	525 864 000	94.26	2 847 502	0.51	28 001 831	5.02	1 187 512	0.21	557 900 845
	1970	654 568 000	94.48	1 419 498	0.21	27 222 924	3.93	9 589 358	1.38	692 799 780
	1971	794 840 000	97.95	—		15 415 760[2]	1.90	1 191 000[2]	0.15	811 446 760[2]

D. Private education

		Subsidy	%	Donations	%	Fees[1]	%	—	%	Total
Private schools and colleges	1969	91 954 400	10.95	—		747 825 660	89.05	—		839 780 060
	1970	97 333 300	10.69	—		813 452 810	89.31	—		910 786 110
	1971	105 663 700	11.46	—		816 114 095	88.54	—		921 777 795

[*continued*

TABLE 31 (continued).

E. Others

Functional units		Subsidies	%	Donations	%	Fees	%	Local res. municipal and own resources	%	Total direct costs
Office of Under Secretary of State for Ministry of Education	1969	77 599 200	99.99	25 500	0.03	—		—		77 624 700
	1970	82 780 320	99.88	101 558	0.12	—		—		82 881 878
	1971	82 978 850	99.95	45 171	0.05	—		—		83 024 031
Dept of Educational Techniques	1969	4 530 100	100.00	—		—		—		4 530 100
	1970	4 654 500	100.00	—		—		—		4 654 500
	1971	4 769 500	100.00	—		—		—		4 769 500
Adult Education Division	1969	13 472 700	85.52	59 459	0.38	2 217 120[1]	14.10	—		15 749 279
	1970	15 075 900	80.16	35 129	0.19	3 695 760[1]	19.65	—		18 806 789
	1971	22 429 740	88.52	—		2 906 160[1]	1.48	—		25 335 900
Mobile Unit Division	1969	17 062 700	99.53	—		81 050	0.47	—		17 143 750
	1970	18 441 300	99.62	—		69 532	0.38	—		18 510 832
	1971	20 929 670	99.43	—		119 240	0.57	—		21 048 910
TOTAL	1969	112 664 700	97.93	84 959	0.07	2 298 170	2.00	—		115 047 829
	1970	120 952 020	96.88	136 687	0.11	3 765 292	3.01	—		124 853 999
	1971	131 107 770	97.71	45 147	0.03	3 025 400	2.26	—		134 178 317
GRAND TOTAL	1969	3 735 826 055	78.57	23 310 416	0.49	881 421 002	18.54	114 076 306	2.40	4 754 633 779
	1970	4 465 400 873	79.55	31 946 117	0.57	990 023 900	17.64	125 569 358	2.24	5 612 940 248
	1971	5 122 520 365	81.39	30 921 179	0.49	1 018 607 797	16.18	121 279 000	1.93	6 293 328 265

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1. Provisional or estimated figure.
2. Incomplete figure.

SOURCE Educational Research Section.

TABLE 32. Recurrent expenditure on technical education by sources of finance, 1959

	Government budget	%	Fee	%	Donation	%	Total
Agricultural training							
Skilled workers or craftsmen	119 635 640	88.25	4 548 960	3.35	11 367 124	8.40	135 551 724
Commercial training							
Office staff	46 360 800	83.70	8 953 920	16.17	72 000	0.13	55 386 720
Training for industry and services							
Technicians	49 263 530	97.96	920 880	1.83	100 000	0.21	50 284 410
Skilled workers or craftsmen	173 330 530	88.69	22 032 000	11.27	50 000	0.04	195 412 530
TOTAL	222 594 060	—	22 952 880	—	150 000	—	245 696 940
GRAND TOTAL	388 590 500	88.99	36 455 760	8.34	11 589 124	2.67	436 635 384

SOURCE Educational Planning Division and Department of Vocational Training, Educational Research Section.

TABLE 33. Current expenditure by purpose in different departments of third-level education including post-graduate, 1969 (baht)

	Arts	Sciences	Agriculture and engineering	Medicine and dentistry	Veterinary	Average
Salaries	50 883 300	29 137 900	19 059 300	67 337 400	1 899 600	33 663 500
Allowances	3 472 800	1 790 000	5 069 700	6 335 100	192 300	3 371 980
Materials	2 531 000	7 528 000	4 959 700	28 756 900	405 000	8 836 120
Other expenditure	3 562 400	5 030 000	4 362 000	8 714 600	440 000	4 421 800
TOTAL	60 449 500	43 485 900	33 450 700	111 144 000	2 936 900	50 293 400

SOURCE NEC.

TABLE 34. Recurrent expenditure on third-level education by sources of financing, 1967 (baht)

	Kasetsart Univ.	Chulalongkorn Univ.	Chiengmai Univ.	Thammasat Univ.
Current expenditure				
Salaries	17 281 300	59 712 900	24 164 800	16 387 800
Allowances	5 285 500	4 166 600	5 226 100	1 482 300
Materials	4 354 700	5 865 000	11 120 000	1 067 000
Other expenditure	3 528 000	3 153 000	11 450 000	1 259 200
TOTAL	30 449 500	72 897 500	51 960 900	20 196 300
Income				
Government subsidies	1 088 300	470 200	174 500	12 400
Fees	2 400 837	5 836 850	4 076 995	4 839 940
Donations	4 460 490	780 515	5 000	284 449
University income	25 600	384 441	—	24 873
Other income	2 750	35 937	342 164	—
TOTAL	7 977 971	7 507 943	4 598 659	5 161 662

SOURCE NEC

Mahidol Univ.	Silpakorn Univ.	Prince of Songkla Univ.	Khankaen Univ.	NIDA	Asian Institute of Technology	Total
47 927 600	4 642 000	4 085 000	5 557 200	7 638 600	485 000	187 880 200
8 580 200	925 500	527 600	1 632 400	510 400	62 700	28 399 300
21 736 900	682 000	1 500 000	3 330 000	564 000	40 000	50 259 600
7 169 600	1 582 000	600 000	2 220 000	653 000	45 000	31 659 800
85 414 300	7 831 500	6 710 600	12 739 600	9 366 000	632 700	298 198 900
2 763 300	110 200	—	1 296 500	359 400	—	6 474 800
764 474	307 015	78 500	848 595	1 007 800	—	20 161 060
2 747 515	50 000	11 000	223 850	21 000	—	8 583 819
—	—	—	—	—	—	434 914
782 346	—	45 350	312 088	15 912	—	1 536 547
7 057 635	467 215	134 850	2 681 033	1 604 172	—	37 191 140

TABLE 35. Recurrent expenditure on education by purpose, 1963-69 (baht)

	1963	1964	1965	1966	1967	1968	1969
First-level education							
Salaries	792 949 700	953 273 700	999 119 100	1 086 541 200	1 177 712 000	1 349 061 020	1 615 3[illegible] 000
Allowances	25 002 100	31 382 000	33 081 700	36 758 700	40 136 700	44 174 700	62 639 700
Materials	11 016 900	14 353 900	16 590 000	18 596 700	20 600 000	22 820 000	26 825 000
Others	63 619 300	69 140 300	120 334 800	67 230 800	98 316 200	20 737 900	131 275 000
Sub-total	892 588 000	1 068 449 900	1 169 125 600	1 211 127 400	1 336 764 900	1 436 793 620	1 836 117 700
Second-level general education							
Salaries	185 587 200	138 595 500	140 082 800	156 903 700	165 500 200	180 690 200	191 110 200
Allowances	9 179 900	6 687 500	7 531 900	8 3[illegible] 400	9 141 600	10 087 200	10 785 036
Materials	4 59[illegible] 900	850 200	1 077 600	1 399 100	1 972 700	4 384 000	4 993 000
Others	73 878 200	80 280 600	80 160 900	79 765 800	97 248 200	85 081 200	105 623 800
Sub-total	273 245 200	226 413 800	228 853 200	246 446 000	273 862 700	280 242 600	312 512 036
Vocational education							
Salaries	72 369 300	74 821 600	81 623 300	86 319 400	104 788 600	117 553 600	121 837 700
Allowances	4 446 500	4 906 700	6 584 100	7 062 400	8 041 300	8 968 000	11 514 200
Materials	[illegible] 619 500	4 444 500	11 017 200	12 318 800	19 973 500	24 335 000	36 720 000
Others	8 489 500	6 853 600	7 806 800	7 255 600	14 831 700	23 306 900	13 149 800
Sub-total	87 924 800	91 026 400	107 031 400	112 956 200	147 635 100	174 163 500	183 221 700

Teacher training							
Salaries	40 191 300	41 469 500	43 810 400	48 363 700	54 575 700	60 422 200	68 598 200
Allowances	3 361 700	3 517 400	3 824 400	4 231 700	4 785 400	5 391 200	7 187 200
Materials	1 762 000	2 344 500	2 550 000	2 760 000	3 210 000	3 590 000	3 890 000
Others	7 374 900	5 578 700	5 161 900	4 131 400	4 678 300	5 225 000	5 335 400
Sub-total	52 689 900	52 910 100	55 346 700	59 486 800	67 249 400	74 628 400	85 010 800
Universities							
Salaries	75 505 100	89 119 600	95 660 900	106 958 600	130 440 000	157 455 900	181 199 000
Allowances	4 929 300	6 244 700	9 151 200	13 745 000	19 049 000	22 274 000	28 937 000
Materials	16 294 600	19 930 700	21 380 750	24 759 000	30 695 000	37 632 000	52 417 000
Others	6 107 400	23 602 000	19 601 450	13 896 000	24 918 000	32 051 000	37 018 000
Sub-total	102 836 400	138 897 000	145 794 300	159 358 000	205 102 000	249 712 000	299 571 000
GRAND TOTAL	1 409 284 300	1 577 697 200	1 706 151 200	1 789 374 400	2 030 614 100	2 215 540 120	2 716 433 236

SOURCE Planning Unit, National Education Council.

TABLE 36. Salary, housing allowance, *per diem* and hotel allowance for the Royal Thai Civil Service (baht)

A	B	C	D	E	F	G	H
Fourth grade	1	540	21	519	118.80	20 baht	30 baht
		570	22	548	125.40	for all	for all
		600	24	576	132.00	levels	levels
		630	25	605	138.60		
		660	26	634	145.20		
	2	690	27	663	151.80		
		720	28	692	158.40		
		750	30	720	165.00		
		780	31	749	171.60		
		810	32	778	178.20		
	3	850	34	816	187		
		900	36	864	198		
		930	38	892	209		
		1 000	40	960	220		
		1 050	42	1 008	231		
	4	1 100	44	1 056	242		
		1 150	46	1 104	253		
		1 200	48	1 152	264		
		1 250	50	1 200	275		
		1 300	52	1 248	286		
Third grade	1	850	34	816	187	26 baht	40 baht
		900	36	864	198	for all	for all
		950	38	912	209	levels	levels
		1 000	40	960	220		
		1 050	42	1 008	231		
	2	1 100	44	1 056	242		
		1 150	46	1 104	253		
		1 200	48	1 152	264		
		1 250	50	1 200	275		
		1 300	52	1 248	286		
	3	1 400	56	1 344	308		
		1 500	60	1 440	330		
		1 600	64	1 536	352		
		1 700	68	1 632	374		
		1 800	72	1 728	396		
Second grade	1	1 300	52	1 248	286	32 baht	60 baht
		1 400	56	1 344	308	for all	for all
		1 500	60	1 440	330	levels	levels
		1 600	64	1 536	352		
		1 700	68	1 632	374		
	2	1 800	72	1 728	396		
		1 900	76	1 824	418		
		2 000	80	1 920	440		
		2 150	86	2 064	473		
		2 300	92	2 208	506		

A	B	C	D	E	F	G	H
	3	2 450	98	2 352	539		
		2 600	104	2 496	572		
		2 750	110	2 640	605		
		2 900	116	2 784	638		
		3 050	122	2 928	671		
First grade	1	2 750	110	2 640	605	38 baht	80 baht
		2 900	116	2 784	638	for all	for all
		3 050	122	2 928	671	levels	levels
		3 200	128	3 072	704		
		3 350	134	3 216	737		
	2	3 500	140	3 360	770		
		3 650	146	3 504	803		
		3 800	152	3 648	836		
		3 950	158	3 792	869		
		4 100	164	3 936	925		
	3	4 250	170	4 080	962.50		
		4 400	176	4 224	1 000		
		4 600	184	4 416	1 050		
		4 800	192	4 608	1 100		
		5 000	200	4 800	1 150		
Special grade	1	4 400	176	4 224	1 000	46 baht	160 baht
		4 600	184	4 416	1 050	for all	for all
		4 800	192	4 608	1 100	levels	levels
		5 000	200	4 800	1 150		
		5 200	208	4 992	1 200		
	2	5 400	216	5 184	1 260		
		5 700	220	5 472	1 350		
		6 000	240	5 750	1 440		
		6 300	252	6 048	1 530		
		6 600	264	6 336	1 620		
	3	7 000	280	6 720	1 740		
		7 400	296	7 104	1 867		
		7 800	312	7 488	2 015		
		8 200	328	7 872	2 200		
	4	8 600	344	8 256	2 400		

A = grade; B = level; C = gross salary; D = retirement benefit contribution; E = net salary; F = housing allowance; G = *per diem*; H = hotel allowance.

NOTES

1. Lower Certificate in Education qualifies for starting salary of 750 baht.
2. Certificate in Elementary Education starts at a salary of 810 baht.
3. Higher Certificate in Education starts at a salary of 900 baht (first level, third grade).
4. Diploma in Education starts at a salary of 1,000 baht.
5. Bachelor's degree (Thai and Asian countries) starts at a salary of 1,250 baht.
6. Master's degree (Thai and Asian countries) starts at a salary of 1,800 baht (second level, second grade).
7. Master's degree (USA and Western countries) starts at a salary of 1,900 baht.
8. Doctorate starts at a salary of 2,450 baht (third level, second grade).
9. This salary scale was applied from 1 October 1967.

SOURCE Chairat Suntharo

TABLE 37. Current unit costs of all education (except universities), 1966-76 (baht)

	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976
First-level education (public)											
Recurrent unit cost	...	...	...	435.1	444.8	456.2	465.3	472.5	476.3	484.0	489.3
Average salary per teacher	...	...	...	13 358	13 573	13 891	14 116	14 289	14 397	14 549	14 657
As % of *per capita* GDP	...	...	...	373	375	361	357	346	333	322	310
Pupil/teacher ratio	...	...	...	35.4	35.4	35.5	35.6	35.7	35.8	35.9	36.0
Second-level education (public)											
Recurrent unit cost	1 129	1 214	1 310	1 211	1 162	1 134	1 135	1 139	1 144	1 139	1 134
Average salary per teacher	14 893	16 107	18 122	19 623	18 449	17 682	17 562	17 571	17 517	17 275	17 040
As % of *per capita* GDP	525	508	545	548	510	460	444	425	406	382	360
Pupil/teacher ratio	16.1	16.6	18.1	20.9	21.0	21.0	20.8	20.6	20.5	20.4	20.4
Teacher training											
Recurrent unit cost (teacher-training)	...	2 560	2 615	2 396	2 297	2 494	2 513	2 535	2 562	2 588	2 618
Recurrent unit cost (College of Education)	...	7 577	6 513	5 639	5 545	5 867	5 914	5 784	5 763	5 760	5 761
Average salary per teacher	...	21 722	22 746	24 044	23 630	26 197	26 475	26 761	27 061	27 317	27 606
As % of *per capita* GDP	...	686	685	672	653	683	670	648	627	604	583
Pupil/teacher ratio	...	9.8	10.3	12.0	12.3	12.3	12.3	12.3	12.3	12.3	12.3
Vocational education—technical education											
Recurrent unit cost (vocational)	...	...	...	...	2 971	2 912	2 896	2 863	2 887	2 895	2 908
Recurrent unit cost (technical)	...	...	...	...	4 869	4 656	4 565	4 520	4 434	4 385	4 354
Average salary per teacher	...	...	...	...	18 848	18 415	18 567	18 375	18 687	18 879	18 988
As % of *per capita* GDP	...	...	...	...	521	480	470	445	433	418	401
Pupil/teacher ratio	...	9.4	10.2	11.0	11.5	11.8	12.2	12.5	12.8	13.2	13.6

TABLE 38. Central government budget requirements for education, assuming no significant change in financing system or cost structure (fiscal year, thousands of baht)

	1972	1973	1974	1975	1976	1977	1978	1979	1980
Ministry of Education, first level	235 067	239 175	248 433	261 966	278 902	291 839	317 248	338 358	355 194
Local auth., first-level subsidy	2 612 663	2 902 302	3 145 147	3 374 375	3 603 821	3 782 800	3 964 737	4 164 994	4 410 171
Municipalities, first-level subsidy	147 561	167 303	190 104	213 212	235 456	247 140	275 730	305 044	335 122
Total	2 995 291	3 308 780	3 583 684	3 849 553	4 118 179	4 321 779	4 557 715	4 808 396	5 100 487
Second level, academic	791 053	886 194	985 802	1 083 377	1 211 053	1 242 875	1 407 692	1 602 533	1 821 256
Second level, vocational	404 632	396 095	402 120	408 398	415 421	462 422	508 696	528 887	552 094
Second level, teacher training	208 723	273 157	282 851	269 004	224 491	241 718	233 167	257 731	268 146
Total	1 404 408	1 555 446	1 670 773	1 760 779	1 850 965	1 947 015	2 149 555	2 389 151	2 641 496
Third level, university	900 500	932 000	993 500	1 089 100	1 199 200	1 338 307	1 493 551	1 656 802	1 860 151
Third level, Ramkamhaeng	24 490	25 100	25 120	25 140	25 150	151 459	166 600	183 260	201 590
College of Education	67 801	83 848	90 985	96 749	89 392	73 483	73 715	76 217	78 581
Prachomklao	35 160	21 700	20 940	19 300	19 400	20 737	23 010	24 211	25 253
Total	1 027 951	1 062 648	1 130 545	1 230 289	1 333 142	1 583 977	1 756 876	1 950 390	2 165 575
Physical education	23 910	27 920	28 800	34 170	37 210	40 707	44 534	48 720	53 300
Fine arts	6 720	8 010	8 520	9 900	10 750	11 675	12 679	13 769	14 953
Educational Techniques	4 400	12 540	11 340	12 620	15 690	17 610	19 790	22 270	25 080
Subsidies to private schools	109 606	118 191	127 508	137 616	148 593	158 846	169 806	181 523	194 048
Under-Secretaries Office	30 550	29 070	28 820	29 750	24 560	37 670	41 060	44 756	48 784
Total	175 186	195 731	204 988	224 056	246 803	266 508	287 869	311 038	336 165
Adult education	31 032	37 092	44 523	53 819	64 521	79 148	94 983	115 859	141 746
Mobile vocational education	27 200	45 827	56 297	68 517	83 651	76 212	82 741	89 842	97 563
ARD skill training	790	850	910	970	1 040	1 114	1 193	1 278	1 368
National Youth Promotion Ctte.	4 590	15 000	15 000	15 000	12 530	15 000	15 000	15 000	15 000
Total	63 612	98 769	116 730	138 306	161 742	170 474	193 917	221 986	255 677
GRAND TOTAL	5 666 448	6 221 374	6 706 720	7 202 983	7 710 831	8 289 753	8 945 932	9 680 961	10 499 400
Plan allocation	5 226 830	5 736 770	6 287 240	6 775 000	7 186 160	7 796 000	8 458 000	9 176 000	9 953 000
Financing gap	439 618	484 604	419 480	427 983	524 671	493 753	487 932	504 961	546 400

TABLE 39A. The projection of total enrolment, kindergarten to MS5

	1972	1973	1976	1980
Kindergarten and pre-first level	137 000	148 000	189 000	267 000
P1	1 567 095	1 601 850	1 708 360	1 746 000
P2	1 261 935	1 316 715	1 445 040	1 553 000
P3	1 139 215	1 183 825	1 342 000	1 490 000
P4	981 355	1 021 395	1 207 780	1 420 000
Total P1-4	4 949 610	5 123 785	5 703 180	6 209 000
P5	389 840	434 560	612 650	871 000
P6	334 790	359 800	507 700	784 000
P7	288 880	316 390	435 290	701 000
Total P5-7	1 013 510	1 110 750	1 555 640	2 356 000
Total kindergarten-P7	6 100 120	6 382 535	7 447 820	8 832 000
MS1	210 967	232 670	297 640	423 000
MS2	182 435	202 190	264 060	372 000
MS3	159 798	176 240	236 500	329 000
Total MS1-3	553 200	611 100	789 200	1 124 000
MS4	46 480	50 830	62 600	79 500
MS5	31 120	36 070	49 300	65 900
Total MS4-5	77 600	86 900	111 900	145 400
Total MS1-5	630 800	698 000	910 100	1 269 400

TABLE 39B. The projection of enrolment in Ministry of Education schools, kindergarten to MS5

	1972	1973	1976	1980
Kindergarten and pre-first level	22 500	23 100	26 600	34 900
P1	20 695	21 010	21 650	22 000
P2	20 405	20 695	21 510	22 000
P3	20 275	20 405	21 330	22 000
P4	18 495	20 275	21 010	22 000
Total P1-4	79 870	82 385	85 500	88 000
P5	58 280	59 200	60 440	65 000
P6	55 320	58 280	60 200	64 000
P7	50 720	55 320	60 080	63 000
Total P5-7	164 320	172 800	180 720	192 000
Total kindergarten-P7	266 690	278 285	292 820	314 900
MS1	125 967	144 670	196 640	296 000
MS2	106 435	122 190	173 060	259 000
MS3	90 798	103 240	153 500	228 000
Total MS1-3	323 200	370 100	523 200	783 000
MS4	29 280	33 230	43 700	58 500
MS5	18 220	22 670	34 400	48 800
Total MS4-5	47 500	55 900	78 100	107 300
Total MS1-5	370 700	426 000	601 300	890 300

TABLE 39C. The projection of enrolment in local authority schools, kindergarten to P7

	1972	1973	1976	1980
Kindergarten	13 100	13 200	15 800	18 100
P1	1 275 980	1 303 570	1 385 790	1 359 000
P2	1 051 280	1 094 070	1 180 740	1 249 000
P3	945 220	983 430	1 104 540	1 207 000
P4	812 760	840 110	994 240	1 157 000
Total P1-4	4 085 240	4 221 180	4 665 310	5 008 000
P5	200 500	241 180	407 620	634 000
P6	157 520	177 170	314 770	563 000
P7	121 350	142 740	250 050	493 000
Total P5-7	479 370	561 090	972 440	1 690 000
Total kindergarten-P7	4 564 610	4 795 470	5 637 750	6 716 100

TABLE 39D. The projection of enrolments in municipal schools, kindergarten to P7

	1972	1973	1976	1980
Kindergarten	3 400	3 700	4 600	6 000
P1	68 620	73 300	90 000	118 000
P2	59 110	63 220	78 870	104 000
P3	53 250	56 760	71 900	96 000
P4	49 030	49 480	62 930	86 000
Total P1-4	230 010	242 760	303 700	404 000
P5	23 120	24 170	27 610	45 000
P6	21 460	22 270	25 640	39 000
P7	19 670	20 440	23 740	34 000
Total P5-7	64 250	66 880	76 990	118 000
Total kindergarten-P7	297 660	313 340	385 290	528 000

TABLE 39E. The projection of enrolments in private schools, kindergarten to MS5

	1972	1973	1976	1980
Kindergarten and pre-first level	98 000	108 000	142 000	208 000
P1	201 800	203 970	210 920	211 000
P2	131 140	138 730	163 920	178 000
P3	120 470	123 230	144 230	165 000
P4	101 080	111 530	129 800	155 000
Total P1-4	554 490	577 460	648 870	709 000
P5	107 940	110 010	116 980	127 000
P6	100 490	102 080	107 090	118 000
P7	97 140	97 890	101 400	111 000
Total P5-7	305 570	309 980	325 470	356 000
Total kindergarten-P7	958 060	995 440	1 116 340	1 273 000
MS1	85 000	88 000	101 000	127 000
MS2	76 000	80 000	91 000	113 000
MS3	69 000	73 000	83 000	101 000
Total MS1-3	230 000	241 000	275 000	341 000
MS4	17 200	17 600	18 900	21 000
MS5	12 900	13 400	14 900	17 100
Total MS4-5	30 100	31 000	33 800	38 100
Total MS1-5	260 100	272 000	308 800	379 100

TABLE 39F. The projection of enrolments in government vocational and technical education

	1972	1973	1976	1980
MS1	920	890	590	350
MS2	1 050	815	538	370
MS3	1 147	930	605	400
Total MS1-3	3 117	2 635	1 733	1 120
MS4	25 252	25 795	28 420	33 200
MS5	20 215	22 267	24 534	28 600
MS6	18 627	18 503	21 819	25 300
Total MS4-6	64 094	66 565	74 773	87 100
Total MS1-6	67 211	69 200	76 506	88 220
(MS4-6 part-time)	(355)	(400)	(420)	(4 200)
Two-year technical: 1st year	5 695	6 855	8 845	12 000
2nd year	3 738	5 274	7 939	10 300
Total	9 433	12 129	16 784	22 300
Three-year technical: 1st year	905	920	1 055	1 230
2nd year	950	836	953	1 090
3rd year	812	884	845	1 000
Total	2 667	2 640	2 853	3 320
Higher technical: 1st year	70	80	114	150
2nd year	—	65	101	130
Total	70	145	215	280
Total technical	12 170	14 914	19 852	25 900
Prachomklao	3 600	3 900	4 300	4 700
Grand total	15 770	18 814	24 157	30 600
(Part-time)	(1 702)	(1 860)	(1 903)	(2 500)

TABLE 39G. The projection of enrolments in universities by field of study

	1972	1973	1976	1980
Universities				
Post-graduate (all fields)	4 300	5 000	6 200	8 500
Undergraduate and below	43 730	46 490	57 550	76 400
The humanities	4 040	4 130	5 000	6 200
Education	4 880	5 700	7 200	9 900
Fine arts	920	940	1 410	1 700
Social sciences	15 000	14 440	15 990	18 000
Pure science	2 970	3 390	4 680	6 200
Engineering	3 370	4 210	5 600	7 300
Medical science	8 520	9 290	12 440	19 900
Agriculture	4 030	4 390	5 230	7 200
Total	48 030	51 490	63 750	84 900
Other third level[1]				
Ramkamhaeng	40 000	53 000	70 000	106 000
Overseas students	5 700	5 700	5 700	4 300
Private colleges	4 000	3 800	3 300	4 600
Total	49 700	62 500	79 000	114 900
Overseas training at university level[2]	9 400	9 400	9 400	9 400

1. The figures for other third-level education are very rough estimates and should be interpreted with caution. Ramkamhaeng University was only opened in 1971 and private universities were only allowed to start operations in 1970, thus there are no data or information on interrelationships.
2. Overseas training statistics are known to be incomplete and unreliable.

TABLE 40. Requirements of teachers

	1972	1973	1976	1980
Kindergarten and first level	182 400	188 700	215 000	259 000
Local authority	125 400	131 400	155 700	190 000
Ministry of Education	10 300	10 300	10 300	10 500
Municipalities	9 600	9 900	11 700	16 000
Private	37 100	37 100	37 300	42 500
Second-level academic	30 100	33 400	44 200	60 700
Public	17 700	20 400	29 500	42 900
Private	12 400	13 000	14 700	18 000
Public vocational, technical & vocational T.T.	7,100	7 300	7 800	9 300
Teacher training	4 300	4 800	6 400	8 800
Other education	11 600	12 700	16 900	22 600
TOTAL	235 500	246 900	290 300	360 600

TABLE 41. Teacher-training enrolments, 1972-80

	1972	1973	1974	1975	1976	1977	1978	1979	1980
Vocational									
Lower certificate									
Agriculture	1 035	1 367	1 457	1 455	1 545	1 650	1 700	1 900	2 100
Handicrafts	350	338	458	570	680	790	800	820	950
Total	1 385	1 705	1 915	2 025	2 225	2 440	2 500	2 720	3 050
Higher certificate									
Agriculture	260	290	290	290	290	350	410	480	550
Handicrafts	230	230	230	230	230	230	230	230	230
Technical	420	420	420	420	420	420	420	420	420
T & T	120	120	120	120	120	130	140	150	160
Vocational	525	525	525	525	525	540	560	580	600
Total	1 555	1 585	1 585	1 585	1 585	1 670	1 760	1 860	1 960
Bachelor's degree	180	180	180	180	180	180	180	180	180
Total full-time vocational	3 120	3 470	3 680	3 790	3 990	4 290	4 440	4 760	5 190
(Part-time bachelor's)	(180)	(330)	(420)	(510)	(510)	(510)	(510)	(510)	(510)
Physical education									
Lower certificate 1	90	180	210	300	510	510	510	510	510
Lower certificate 2	120	90	120	210	300	510	510	510	510
Total	210	270	330	510	810	1 020	1 020	1 020	1 020
Bachelor 1	300	300	300	300	300	330	360	390	420
Bachelor 2	290	300	300	300	300	300	330	360	390
Bachelor 3	320	290	300	300	300	300	300	330	360
Bachelor 4	300	320	290	300	300	300	300	300	330
Total	1 210	1 210	1 190	1 200	1 200	1 230	1 290	1 380	1 500
Full-time academic									
Lower certificate: yr. 1	15 000	16 000	16 000	16 000	16 000	16 000	16 850	17 690	18 250
yr. II	15 400	16 500	17 600	17 600	17 600	17 600	17 600	18 540	19 460

	1972	1973	1974	1975	1976	1977	1978	1979	1980
Pow paw	4 600	6 500	7 400	9 400	9 400	9 400	9 400	8 400	9 400
Total	35 000	39 000	41 000	43 000	43 000	43 000	43 850	44 630	47 110
Higher certificate: yr. I	6 010	6 090	9 000	9 650	10-11 900	11 130	11 350	11 660	12 000
yr. II	4 990	6 910	7 000	10 350	11 100	12-16 720	13 800	13 050	13 410
Total	11 000	13 000	16 000	20 000	22-26 000	23-27 850	25 150	24 710	25 410
Bachelor: yr. I	700	790	790	920	940	940	940	940	940
yr. II	800	800	910	910	1 060	1 080	1 080	1 080	1 080
yr. III	2 550	3 160	3 350	3 860	4 020	4 020	4 020	4 020	4 020
yr. IV	2 400	2 690	3 320	3 520	4 050	4 220	4 220	4 220	4 220
Total	6 450	7 440	8 370	9 210	10 070	10 260	10 260	10 260	10 260
Post-graduate	550	560	630	790	930	1 000	1 080	1 170	1 260
GRAND TOTAL FULL-TIME	53 000	60 000	66 000	73 000	76-80 000	77-82 000	79 340	81 770	84 040
Part-time academic									
Lower certificate: yr. I	7 900	7 900	7 900	7 900	9 400	2 630	1 500	500	—
yr. II	7 170	7 100	7 100	7 100	7 100	8 460	2 370	1 350	450
Total	15 070	15 000	15 000	15 000	16 500	11 090	3 870	1 850	450
Higher certificate: yr. I	3 160	3 160	3 160	3 160	4 160	4 160	4 160	4 160	4 160
yr. II	2 840	2 840	2 840	2 840	2 840	3 330	3 330	3 330	3 330
Total	6 000	6 000	6 000	6 000	7 000	7 490	7 490	7 490	7 490
Bachelor's degree: 3rd yr. I	2 200	3 200	3 500	3 500	3 500	3 000	2 500	2 000	2 000
3rd yr. II	2 100	2 000	2 900	3 200	3 200	3 200	2 700	2 200	1 800
4th yr. I	2 100	1 900	1 800	2 600	2 800	2 800	2 800	2 400	2 000
4th yr. II	1 500	1 900	1 700	1 600	2 400	2 600	2 600	2 600	2 200
Total	7 900	9 000	9 900	10 900	11 900	11 600	10 600	9 200	8 000
GRAND TOTAL PART-TIME	28 970	30 000	30 900	31 900	35 400	30 180	21 960	18 540	15 940

TABLE 42. Projection of teacher qualification structure

	1972	1973	1976	1980
Kindergarten and first level	100	100	100	100
Bachelor & above	1.0	1.0	1.0	1.0
Higher cert. & equiv.	15.9	16.0	16.2	17.4
Lower cert. & equiv.	65.4	66.0	66.0	68.0
Other	17.7	17.0	16.8	13.6
MS1-5 public	100	100	100	100
Bachelor & above	37.0	37.0	37.0	44.0
Higher cert. & equiv.	54.0	55.0	58.0	56.0
Lower cert. & equiv.	5.0	4.0	1.0	—
Other	4.0	4.0	4.0	—
MS1-5 private	100	100	100	100
Bachelor & above	13.2	19.2	34.8	37.5
Higher cert. & equiv.	38.0	39.2	40.4	46.5
Lower cert. & equiv.	8.3	7.2	4.2	4.0
Other	40.5	34.4	20.6	12.0
Public vocational & tech. T.T.	100	100	100	100
Bachelor & above	51.0	52.0	55.0	55.0
Higher cert. & equiv.	35.0	35.0	35.0	39.0
Lower cert. & equiv.	12.0	11.0	8.0	4.0
Other	2.0	2.0	2.0	2.0
Teacher training	100	100	100	100
Bachelor & above	82.0	84.0	90.0	90.0
Higher cert.	8.0	7.0	4.0	4.0
Lower cert.	7.0	6.0	3.0	3.0
Others	3.0	3.0	3.0	3.0
Other education	100	100	100	100
Bachelor	33.0	34.0	37.0	41.0
Higher cert. & equiv.	25.0	25.0	25.0	29.0
Lower cert. & equiv.	12.0	11.0	8.0	8.0
Others	30.0	30.0	30.0	22.0

TABLE 43. Alternative revenue proposals: increase in fee income (thousands of baht)[1]

Agencies	1972	1976	1980
Ministry of Education	9 859	10 843	11 520
Local authority	28 762	58 346	101 400
Municipality	no fee	no fee	no fee
Total first level	38 621	69 189	112 920
Second level academic	57 548	83 028	115 700
Second level vocational	8 332	9 720	11 323
Teacher-training certificates	4 250	6 070	6 780
Techniques (excluding *Prachomklao*)	3 042	4 963	6 475
Total second level	73 172	103 781	140 278
Prachomklao	7 200	8 600	9 400
College of Education	13 867	21 650	22 059
Nine universities	96 780	127 500	169 800
Total third level	117 847	157 750	201 259
Less: Loan payments	70 508	94 650	120 755
Plus: Loan repayments[2]	—	—	88 164
Net total, rounded to nearest 100,000 baht	159 100	236 100	421 900

1. The following assumptions were made about the increase in fees from their present level: upper first level, 60 baht; second level academic, MS1-3, 90 baht; MS4-5, 100 baht; second level vocational, MS1-3, 100 baht; MS4-6, 130 baht; lower certificate teacher training, 90 baht; higher certificate, 100 baht; Techniques, 250 baht; *Prachomklao*, 2,000 baht; College of Education, 2,150 baht; nine universities, 2,000 baht.
2. Loan repayment = loan payment five years later; only 60 per cent of pupils at *Prachomklao*, College of Education and universities require loans.

TABLE 44. Savings over basic alternative through greater utilization of teachers and facilities (thousands of baht)

Categories	1973	1974	1975	1976	1977	1978	1979	1980
Double shifts								
Municipalities								
Rec. 10% saved	450	1 070	1 750	2 470	3 310	4 320	5 500	6 800
Cap. 90% saved (50% of the inc.)	15 100	22 090	24 710	27 800	32 780	39 410	45 410	49 580
Total	15 550	23 160	26 460	30 270	36 090	43 730	50 910	56 380
Second level, Ministry of Education								
Rec. 20% saved	2 520	5 140	7 790	10 460	13 160	16 510	20 290	24 770
Cap. 90% saved (20% of the inc.)	74 640	79 770	84 730	89 190	91 510	110 020	125 270	146 660
Total	77 160	84 910	92 520	99 650	104 670	126 530	145 560	171 430
Sandwich courses								
Vocational Schools								
Rec. 30% saved	1 710	4 400	6 150	8 110	10 290	12 780	15 890	19 000
Cap. 90% saved (all inc.)	38 350	61 700	41 390	47 250	54 080	61 600	79 170	78 990
Total	40 060	66 100	47 540	55 360	64 370	74 380	95 060	97 990
Technical Ed.								
Rec. 30% saved	1 860	3 040	4 170	5 020	5 680	6 670	7 780	9 070
Cap. 90% saved (50% of the inc.)	33 070	22 720	22 870	17 930	14 490	20 150	25 920	26 680
Total	34 930	25 760	27 040	22 950	20 170	26 820	33 700	35 750
Rec.	6 540	13 650	19 860	26 060	32 440	40 280	49 460	59 640
Cap.	161 160	186 280	173 700	182 170	192 860	231 180	275 770	301 910
GRAND TOTAL	167 700	199 930	193 560	208 230	225 300	271 460	325 230	361 550

SOURCE Educational Research Section.

TABLE 45. Other possible ways of raising further revenue, by level of education (baht)

	1976	1980
First level		
Movies, music	8 108 326	17 559 763
Donations from expanded parent-teacher associations, alumni	22 200 000	27 300 000
Parties and fun fairs	3 243 324	7 023 905
Selling arts, crafts, foods and agricultural products	1 175 320	2 773 365
School lunch, rent from food stalls	38 543 280	93 072 063
Co-operatives	—	—
TOTAL	73 270 250	147 729 096
Second level		
Movies, music	883 883	2 077 280
Donations from expanded parent-teacher associations, alumni	17 180 033	25 153 286
Parties and fun fairs	331 431	778 953
Selling arts, crafts, food and agricultural products	66 348 250	87 600 500
School lunch, rent from food stalls	1 104 903	2 885 171
Co-operatives	1 134 257	2 252 538
TOTAL	86 982 757	120 747 728
Universities		
Movies, music	198 684	219 474
Donations from expanded parent-teacher associations, alumni	2 196 000	2 987 000
Parties and fun fairs	496 719	548 280
School lunch, rent from food stalls	198 684	219 303
Co-operatives	3 506 250	5 094 000
TOTAL	6 596 337	9 068 057
GRAND TOTAL	166 849 344	277 544 881

SOURCE Educational Research Section.

TABLE 46. Alternative budget proposals (thousands of baht)

	1972	1973	1974	1975	1976	1977	1978	1979	1980
1. 6 yr. first level alternative									
First level	2 995 291	3 452 028	3 726 932	4 005 823	4 222 242	4 477 525	4 719 449	5 027 014	5 303 568
Sec., voc. & T.T.	1 404 408	1 555 446	1 670 773	1 760 779	1 850 965	1 947 015	2 149 555	2 389 151	2 641 496
Third level	1 027 951	1 062 648	1 130 545	1 230 289	1 333 142	1 583 977	1 756 876	1 950 390	2 165 575
Other education	175 186	195 731	204 988	224 056	246 803	266 508	287 869	311 038	336 165
Adult & non-formal	63 612	98 769	116 730	138 306	161 742	170 474	193 917	221 986	255 677
TOTAL	5 666 448	6 364 622	6 849 968	7 359 253	7 814 894	8 445 499	9 107 666	9 899 579	10 702 481
Financing gap	439 618	627 582	562 728	584 253	628 734	649 499	649 666	723 579	749 481
2. Improved second-level education alternative									
First level	2 995 291	3 308 780	3 583 684	3 849 553	4 118 179	4 321 779	4 557 715	4 808 396	5 100 487
Sec., voc. & T.T.	1 404 408	1 555 446	1 670 773	1 795 455	1 986 300	2 210 087	2 581 228	2 998 446	3 365 598
Third level	1 027 951	1 062 648	1 130 545	1 230 289	1 333 142	1 583 977	1 756 876	1 950 390	2 165 575
Other education	175 186	195 731	204 988	224 056	246 803	266 508	287 869	311 038	336 165
Adult & non-formal	63 612	98 769	116 730	138 306	161 742	170 474	193 917	221 986	255 677
TOTAL	5 666 448	6 221 374	6 706 720	7 237 659	7 846 166	8 552 825	9 377 605	10 290 256	11 223 502
Financing gap	439 618	484 604	419 480	462 659	660 006	756 825	919 605	1 114 256	1 270 502

	1972	1973	1974	1975	1976	1977	1978	1979	1980
3. Alternative 1 + 2									
First level	2 995 291	3 452 028	3 726 932	4 005 823	4 222 242	4 477 525	4 719 449	5 027 014	5 303 568
Sec., voc. & T.T.	1 404 408	1 555 446	1 670 773	1 725 455	1 986 300	2 210 087	2 581 228	2 998 446	3 365 598
Third level	1 027 951	1 062 648	1 130 545	1 230 289	1 333 142	1 583 977	1 756 876	1 950 390	2 165 575
Other education	175 186	195 731	204 988	224 056	246 803	266 508	287 869	311 038	336 165
Adult & non-formal	63 612	98 769	116 730	138 306	161 742	170 474	193 917	221 986	255 677
TOTAL	5 666 448	6 364 622	6 849 968	7 393 929	7 950 229	8 708 571	9 539 339	10 508 874	11 426 583
Financing gap	439 618	627 852	562 728	618 929	764 069	912 571	1 081 339	1 332 874	1 473 583
4. 6 yr. first level + 65% progression to second level									
First level	2 995 291	3 452 028	3 726 932	4 005 823	4 222 242	4 477 525	4 719 449	5 027 014	5 303 568
Sec., voc. & T.T.	1 404 408	1 555 446	1 670 773	1 760 779	1 893 920	2 123 982	2 518 629	2 945 121	3 327 386
Third level	1 027 951	1 062 648	1 130 545	1 230 289	1 333 142	1 583 977	1 756 876	1 950 390	2 165 575
Other education	175 186	195 731	204 988	224 056	246 803	266 508	287 869	311 038	336 165
Adult & non-formal	63 612	98 769	116 730	138 306	161 742	170 474	193 917	221 986	255 677
TOTAL	5 666 448	6 364 622	6 849 968	7 359 253	7 857 849	8 622 466	9 476 740	10 455 549	11 388 371
Financing gap	439 618	627 852	562 728	584 253	671 689	826 466	1 018 740	1 279 549	1 435 371

TABLE 47. Rate of growth (per cent per annum) of required budgets by level, 1972/76, 1976/80 and 1972/80 for different alternatives

	Basic assumption			6 yr. first level alternative			80% progression first/second level			6 yr. first level + improved second level			6 yr. first level + 65% progression		
	72/76	76/80	72/80	72/76	76/80	72/80	72/76	76/80	72/80	72/76	76/80	72/80	72/76	76/80	72/80
First level	8.3	5.5	6.9	8.9	5.9	7.4	8.3	5.5	6.9	8.3	5.5	6.9	8.9	5.9	7.4
Second level, vocational and T.T.	7.1	9.3	8.2	7.1	9.3	8.2	9.1	14.1	11.5	9.1	14.1	11.5	7.8	15.1	11.4
Third level	6.7	12.9	9.8	6.7	12.9	9.8	6.7	12.9	9.8	6.7	12.9	9.8	6.7	12.9	9.8
Other education	8.9	8.1	8.5	8.9	8.1	8.5	8.9	8.1	8.5	8.9	8.1	8.5	8.9	8.1	8.5
Adult and non-formal	26.3	12.1	16.7	26.3	12.1	16.7	26.3	12.1	16.7	26.3	12.1	16.7	26.3	12.1	16.7
AVERAGE	8.0	8.0	8.0	8.4	8.2	8.3	8.5	9.4	8.9	8.8	9.5	9.2	8.5	9.7	9.1

TABLE 48. Percentage of financing gap for alternative budget proposals

	1972	1973	1974	1975	1976	1977	1978	1979	1980
1. Basic alternative	7.76	7.79	6.25	5.94	6.80	5.96	5.45	5.22	5.20
2. 6 yr. first level alternative	7.76	9.86	8.22	7.94	8.05	7.69	7.13	7.31	7.00
3. Improved second level alternative	7.76	7.79	6.25	6.39	8.41	8.85	9.81	10.83	11.32
4. Alternative 2 + 3	7.76	9.86	8.22	8.37	9.61	10.48	11.34	12.68	12.90
5. 6 yr. first level + 65% progression	7.76	9.86	8.22	7.94	8.55	9.59	10.75	12.22	12.60

Appendix II.

1. *Enrolment Projections*

The following symbols are used for the enrolment projections:

P_y^a = age-specific population by year;
E_y^g = enrolment by grade and year;
R_y^g = repeater rate by grade and year;
D_y^g = drop-out rate by grade and year;
$L_{y\to y+1}^{g\to g+1}$ = promotion rate by grade and year;
T_y^a = proportion of age-specific population entering P1 by year;
I_y^a = intake into P1 of age-specific population by year;
S_y^L = share of public sector in total enrolments by level;
X_y^g = examination pass rate by grade and year;
O_y^g = output by grade and year;
Q_L^y = proportion of population enrolled by level.

The following equations were used:

a) Students in any grade and year either repeat that grade, drop out or are promoted:
$R_y^g + D_y^g + L_{y\to y+1}^{g\to g+1} = 1$

b) Enrolment in *Prathom* 1 in any year is equal to the sum of the intakes of six, seven and eight year olds, plus the repeaters from the previous year's *Prathom* 1:

$$a = 6 \to 8$$
$$E_y^1 = \Sigma T_y^a P_y^a + E_{y-1}^1 E_{y-1}^1$$

c) Enrolment in each grade and year is equal to the sum of the repeaters from that grade the year before, and those promoted from the lower grade the year before:
$E_y^g = E_{y-1}^g R_{y-1}^g + E_{y-1}^{g-1} L_{y-1\to y}^{g-1\to g}$

d) The proportion of the population enrolled in each level is equal to the enrolment in that level and in that year divided by the national age population of that year:

$$Q_y^L = \frac{E_y^L}{P_y^L}$$

where $E_y^L = \sum_{g=x\to n} E_y^g$
with x and n being the grade limits of that particular level, and
$P_{y.}^L = \sum_{a=x+5\to n+5} P_y^a$

e) The success rate of a particular grade in a particular year plus the failure rate is equal to the total output:
O_y^g (pass) + O_y^g (fail) = O_y^g.

f) The output passing a particular examination is equal to those passing that examination in a particular year less those promoted to the next grade:
O_y^g (pass) = $E_y^g (X_y^g - L_{y\to y+1}^{g\to g+1})$.

g) The output failing a particular examination is equal to those failing in that year less those repeating that grade:
O_y^g (fail) = $E_y^g (1 - X_y^g - R_y^g)$.

h) The output going into a particular labour force category is equal to the output passing at the lower limit, the output passing and failing between the limits, and the output failing the upper limit.
$O_y = O_y^c$ (pass) + $O_y^{c+1 \to d-1}$ + O_y^d (fail) where c and d are grade limits of labour force category.

i) Public enrolments in a particular grade and year are equal to total enrolments multiplied by the share of public in the total. Private enrolments are equal to total enrolments less the public enrolments.
Pub. $E_y^g = E_y^g S_y^g$
and priv. $E_y^g = E_y^g - E_y^g S_y^g$.

2. *Teacher-training enrolment projections*

The following symbols are used for the teacher projections:

stock of teachers by level, qualification and year q = 1 post-graduate
q = 2 bachelor's degree
q = 3 higher certificate or equivalent
q = 4 lower certificate or equivalent
q = 5 other and unqualified

V_y^L = pupil/teacher rates by level and year;
$U_{y,q}^L$ = proportion of teacher stock by qualification where $U_{y,1}^L + U_{y,2}^L + U_{y,3}^L + U_{y,4}^L + U_{y,5}^L = 1$;
$A_{y,q}$ = attrition rate of teachers by qualification and year;
E_y^L = enrolment by level and by year;
$W_{y,q}^L$ = new teachers required by level, by year and by qualification;
$I_{y,tt}^{g,q}$ = intake by qualification into teacher training;
Z_y^q = proportion of new intake in teacher training by qualification coming from already qualified teachers;
$C_{y,tt}^{qg}$ = enrolment in terminal grades of teacher training by qualification;
$X_{y,tt}^q$ = examination pass rates in teacher training by qualification;
$R_{y,tt}^g$ = repeater rate by grade and year in teacher training;
$C_{y \to y+1,tt}^{g \to g+1}$ = gross progression rate teacher training by grade and year;

The following equations were used:

a) The stock of teachers with a given qualification at a given level in any year is equal to the stock the year before less the wastage plus the increase in teachers for the new enrolments (to calculate teacher stock by qualification):

$$H_{y,q}^L = H_{y-1,q}^L (1 - A_{y,q}) + \left[\frac{E_y^L - E_{y-1}^L}{V_y^L}\right] U_{y,q}^L.$$

b) New teacher requirements at a given level in a given year with a given qualification; equal either to the stock in that year less the stock the year before, or equal to the

wastage of the previous year's stock, plus the increase needed for the new enrolment (to calculate the output required from teacher-training colleges):

$$W^L_{y,q} = H^L_{y,q} - H^L_{y-1,q}$$

$$\text{and } W^L_{y,q} = H^L_{y-1,q} A_{y,q} + \left[\frac{E^L_y - E^L_{y-1}}{V^L_y}\right] U^L_{y,q}.$$

c) The total new teachers required by qualification is equal to the sum of the new teachers required in all levels of education (to calculate the output required from teacher-training colleges):

$$W_{y,q} = \sum_{L=1}^{L=n} W^L_{y,q}.$$

d) Enrolment by grade in teacher training is equal to the new teachers required for the teacher profession, plus those required for intakes into the next level of T.T. To solve this equation it is necessary to start at the highest level of T.T. and to proceed to subsequent lower levels (to calculate enrolment in teacher training):

$$C^{q,g}_{y,tt} X^q_{y,tt} = W_{y,q} + I^{g,q+1}_{y,tt} Z^{q+1}_y$$

e) Enrolment by grade in teacher training is equal to the terminal grade enrolment divided by the promotion rate from that grade to the terminal grade. The T.T. system is considered to consist of four two-year cycles (to calculate enrolment in teacher training):

$$E^g_{y,tt} = \frac{C^{q,g+1}_{y-1}}{C^{g\to q+1}_{y-1\to y}}$$

f) The intake into a given grade in a certain year is equal to the enrolment in that grade less the repeaters from the previous year.

$$I^{g,q}_{y,tt} = E^g_{y,tt} - E^g_{y-1,tt} R^g_{y-1,tt}.$$

3. *Other equations*

The following symbols were used for the remaining equations:

B^F_n = expenditure in fiscal year n;
B^A_n = expenditure in academic year n;
$H_{y,q}$ = stock of teachers by qualification and year;
$A_{y,q}$ = attrition of teachers by qualification and year;
$F_{y,q}$ = length of service of teachers with a given qualification in a given year.

The following equations were used:

a) Expenditures in a given academic year are equal to 5/12 of the expenditures in the equivalent fiscal year plus 7/12 of the expenditures in the next fiscal year:

$$B^A_n = \frac{5}{12} B^F_n + \frac{7}{12} B^F_{n+1}$$

b) Expenditures in a given fiscal year are equal to 5/12 of the expenditures in the equivalent academic year plus 7/12 of the expenditures in the previous academic year:

$$B^F_n = \frac{7}{12} B^A_{n-1} + \frac{5}{12} B^A_n$$

c) The length of service of teachers with a given qualification in a given year is equal to the stock of teachers in the previous year multiplied by their experience in this year minus the experience of teachers retiring (1.5 times the average experience) divided by the stock of teachers in that year:

$$F(y+1)q = \frac{H_{y,q}(F_{(y+1)q}) - 1.5A_{y,q}(F_{(y+1)q})}{H_{(y+1)q}}$$

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The book

This study analyses past developments in the educational system of Thailand and its financing, as well as past economic development, and makes some tentative projections through to 1980 of the financial requirements of the educational system. It also discusses the steps that might need to be taken to raise sufficient financial resources.

Nicholas Bennett's work throws considerable light on the mechanism of the interrelations between economic and social factors, financial possibilities and educational policy in Thailand. In this respect, it forms an important contribution not only to the understanding of the problems of educational financing, but also to the methodology of educational planning.

The author

Nicholas Bennett was a manpower planner in Uganda in the 1960's and was a participant in the IIEP's training programme, 1968/69, since when he has been attached to the Ministry of Education in Thailand as a Unesco expert in educational planning.

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